
The
Homebuilder

From the collection of the



San Francisco, California
2007

Digitized by the Internet Archive
in 2007 with funding from
Microsoft Corporation

http://www.archive.org/details/numeroulder00rauch



The Homebuilder

Copyright, 1923
by
National Homebuilders Institute



TO HELP YOU BUILD YOUR HOME

"The first sure symptoms of a mind in health are rest of heart and pleasure felt at home."

THE day of Mr. Just Anybody has passed into history. At one time this very estimable gentleman, the pioneer of our modern social and industrial organizations, found it necessary to be a Jack-of-all-trades. When the nearest doctor was twenty miles away, when the dentist was looked upon as a luxury, when there were no transportation lines to convey to him the products of the world's toil, he, of necessity, found forced upon him many lines of industrial activity.

It thus turned out that Mr. Anybody was, of necessity, the shoemaker, the dentist, the blacksmith, the weaver, the butcher, the carpenter and what not. But rapid transit, the telephone, the daily paper and a more congested population have changed all that. We are now living in an age of experts, an age of the most refined division of labor, an age of specialists. And he who would keep the pace set by modern speed, modern efficiency and modern standards, cannot leave out of account this one essential fact. He must recognize the potency of this law, or drop out of the procession.

Did you ever consider the vast difference in the meaning of the words "house" and "home"? A house is a structure to live in; a home is the dearest place on earth. It is a part of us and expresses our taste and character.

For every home-loving man and woman, and anyone who is not home-loving is to be pitied, there is not a more agreeable task than the planning and building of a home. Everyone, it is to be supposed, at some time has pictured in the mind's eye an ideal home designed, constructed, finished and furnished "just as I would have it," and has looked forward to a time when the dream structure might become a reality.

The purpose of the National Homebuilder's Society as an organization is to encourage the homebuilder whom we hope, as the result of years of practical experience, to assist through the various steps from the first impulse to build a home for himself to the final accomplishment in a home as convenient, as substantial, as comfortable and as beautiful as the money he has to invest and expert guidance in matters of site, style, material and workmanship can make it.

In these days, when American extravagance in the consumption of natural resources is beginning to tell its unhappy story in the high cost of material we are beginning, not exactly to conserve, for that day is past, but to economize. The great manufacturer today has his high-salaried efficiency expert whose business is chiefly to see that there is no lost motion, and no needless waste of materials.

The time was when the saw-and-hatchet carpenter was employed as architect, mason, plumber, plasterer and what not, but not so today for the expert specialist has come to stay and he has been found to be a most economical institution. He is here very largely as the result of the ever and rapidly increasing cost of material which, in turn, is with us today because nobody thought of conservation until there was little left to conserve. Because the forest supply in the United States was thought to be limitless the builders did not deem it necessary to utilize the odds and ends of their cuttings or to put into the building any but the best of lumber even where the rough product would answer quite as well.

But today high costs render inadvisable any such extravagance and to prevent it the wise builder, even of a four room "cosy" will secure and depend upon the best skill, advice and architectural service available. There he gladly pays his little stipend for he knows that with the limit he has set for himself he will get far greater convenience, a better constructed and better appearing building for his money, if some one who "knows the game" is called in to formulate his plans for him and to set down the specifications under which those plans are to go forward to completion.

It is with this thought in mind (of furnishing the prospective homebuilder with helpful suggestions and advice) that this book was compiled. We believe that no better service can be rendered the homebuilders of the country than to establish in their minds a confidence in the best materials and in expert advice and workmanship, for in that direction lie economy both in construction and in maintenance and the utmost possible convenience for the means available.

In establishing the National Homebuilder's Society it was not the intention of its organizers to compete with the local architect. However, our

many years of experience in the designing and construction of small homes has informed us that a very large percentage of the homes which can be constructed for less than fifteen thousand dollars do not get architectural supervision. It is our desire to place at your disposal a complete architectural service in connection with the construction of small homes at cost as the National Homebuilder's Society is being conducted as a non-profiting organization.

In constructing a home without architectural supervision there is certain to be a large percentage of waste and where money is limited, as it usually is, waste results in the elimination of many indispensable conveniences. Twelve thousand feet of lumber will construct a barn or a well planned home which is architecturally correct, but if not properly planned and designed a larger amount of expensive materials will be required. To meet this added expense, certain conveniences essential to the well appointed home must be left out and in the process that which was intended to be a home will become a mere house.

Our service to the homebuilder is intended to make just those suggestions which make the difference between the house and the home. Our experience in the use of building materials and equipment and the designing and construction of small homes has extended over a period of years and has qualified us to speak with authority on the subjects treated in our text. Before incorporating any recommendations or advice in regard to the building materials and equipment in "The Homebuilder" we spent considerable time investigating the materials which would give the best satisfaction and would be in keeping as to cost with the moderate priced home. We do not mean to say that the materials and equipment we are recommending are the only materials that would answer the purpose of the builder but we do mean that those recommended in this volume have been given the test of experience and are all that is claimed of them. They have proven to be successful and their use is not a hazard, but a guarantee.

Ninety-five per cent of the small homes erected in the United States are built without the services of an architect. How many things can and do happen where, to many peoples' ways of thinking, the luxury of an architect is dispensable. Long lengths of lumber may be used where shorter, and therefore cheaper, lengths would serve quite as well; waste in cutting joists, rafters, sheathing and siding is occasioned by the lack of proper planning and specific directions. Lumber comes in certain lengths and sizes and the dimensions of rooms should necessarily be governed by these lengths and sizes to avoid waste in material.

To realize the greatest economy, every inch of space inside the walls should be utilized. It is the designer's part in planning an inexpensive home to see that it is so designed that materials will work in to best advantage. Care should be exercised to see that the design gives the greatest amount of livable room in the most limited floor area.

A builder of our acquaintance intended to erect a home at a cost of $6000.00 and put his proposition up to a "saw-and-hatchet" carpenter to draw up his own plans and specifications on a competitive bid. It will not take much imagination to realize that the results obtained were not satisfactory to the builder. Good judgment is the most needed element to the man who is about to construct a home; and good judgment is seldom acquired along this line without experience. The wise builder is one who is willing to benefit by the experience of others or else is willing to acquire the assistance of experts in working out his building problems. The experts make it their business to become thoroughly familiar with all materials and equipment which enter into the construction of a home.

The homebuilder should make the building of his home his hobby, study the materials which enter into the construction of the foundation, frame-work and roof, be sure that the heating plant will give maximum results without a forced fire and that the windows and doors are placed so as to give the best possible wall space for attractive furnishing.

Just here we wish to state that your membership in the National Homebuilder's Society entitles you to a great deal more than an ordinary architectural service. The average set of plans prepared by an architect will include the floor plan, foundation plan, two or four elevations, millwork details and specifications. Plans furnished by the National Homebuilder's Society include foundation plans and detail, floor plans, four elevations, millwork details, complete details showing installation of heating, lighting and plumbing, specifications, bills of material, quantity surveys and instructions for erection. Your membership also entitles you to consult experts in the matters of interior decorating, landscape gardening, etc.

In other words, what we propose to do for the homebuilder who seeks our co-operation is to furnish him with a set of complete detailed instructions that will reduce waste of material and costly mistakes often made by inexperienced builders to the zero point, and to give him the maximum convenience, durability and appearance for the money he has to invest in a home.

It costs less now and will cost less in the future to build a home according to well established standards. Again, it is the difference between inexpert guidance and expert guidance, between waste and economy, between a house and a home. To the homebuilders of America the National Homebuilder's Society, in the present volume, makes its initial bow. We are happy to make your acquaintance, through the medium of these pages, and express the hope that our relations may be mutually helpful.

To make men out of boys, and women out of girls,
there is no place like home—

Character is not best formed in an apartment house,
or in the fashionable hotel—
no two years in the same place—

The sweetest type of heaven is home.

J. G. Holland.

CAN I AFFORD TO BUILD?

IT is not unlikely that any man ever entered upon a homebuilding program who did not first ask himself the question, "Can I afford to build?" And it is just as unlikely that any man of thrift ever built a home under normal conditions who did not wonder when the last installment lifted the mortgage on his home, "How could I have afforded *not* to build?" The day a cancelled mortgage on the home is put into the little wife's hands is always an epochal day in the family history—a day of triumphs, for in most cases. the cancelled mortgage represents courage, thrift, industry, grit, sacrifice. There it is, in lieu of perhaps three or four thousand dollars in rent receipts, three or four thousand dollars and three or four years of labor—gone up in smoke. From this day on life assumes a different aspect. The question "Can I afford to build?" becomes at once the question, "Can I afford *not* to build?"

Comparative Cost of Renting and Owning Your Own Home

THE National Association of Real Estate Boards recently made a nation-wide investigation as to the over-production or under-production of housing facilities. This investigation, which was most thorough, demonstrated that the housing shortage was not as acute as it was two years ago; nevertheless, it was far from being made up and that the probability of a considered reduction of rents by reason of over-production is at least several years off in the large majority of cities.

Of the 184 cities reporting, 131 declared a housing shortage existed and despite records of tremendous construction in 1922, it showed that there was no over-production in 164 out of 178 cities. The report for 120 out of 155 cities indicated that there is one dwelling, apartment or some form of structure available for each family in the country. This is assumed by most people to be normal. A little thought will convince one that such a condition is decidedly unsatisfactory, because many families are obliged to occupy undesirable quarters in undesirable locations and very likely have to pay high rent. In other words, with no surplus to choose from, the tenants are at the mercy of the owners just as the owners would be at the mercy of the tenants should the community be very much over-built. For rental conditions to be normal in any community there should be vacancies equal to five per cent of the total number of families requiring housing accommodations. This is necessary in order that a family desiring to move might have a reasonable number of vacancies to select from and at a fair price.

There are two classes of builders: Speculative builders, who build to sell or rent at a profit; and homebuilders, who build for their own convenience and saving. A large amount of the building in this country is done by speculative builders and there is no denying that they are in the business for a profit and the price paid to them, either in rent or in the purchasing of the property is sure to result in their favor. This fact alone should convince any persons who have been skeptical regarding the proposition of owning their own homes. And the fact remains that you will have to pay a profit to a landlord or to yourself.

As an investment, or considering the proposition from a dollar and cents point of view, owning one's own home costs less and gives a great deal more satisfaction. We will take as an example, a home which costs $7,000.00 and make the comparison from both angles. When renting, one would be obliged to pay the owner from 6 to 7 per cent interest on his investment plus the cost of taxes, insurance, upkeep and depreciation on the property. This would vary in different localities but seldom totals less than 10 per cent and under present conditions reports show that the landlord must receive in the neighborhood of 12½ or 13 per cent to net him the profit which he considers is due him.

Again considering the $7000.00 home which a man is renting from the landlord. We will assume that the average gross rental obtained by the landlord is 12 per cent, which means that the renter would have to pay $70.00 per month, or $840.00 per year, or $8,400.00 over a period of ten years which is the average time allowed for the builder to pay for a home. $70.00 a month really does not sound like a great deal of money, but $8,400.00 to the average American family spells a neat little savings account. If you were the builder of this home, and we will assume that you are in a position to finance 50 per cent of your proposition, it would mean that you would have $3,500.00 invested which, if carried in the bank, would not net you more than 4 per cent, and if invested in other safe securities would not exceed 6 per cent. Therefore, we will make the carrying charge on your investment at 5 per cent which is $175.00 per year or $14.58 per month. The other $3,500.00 required to complete your home, if secured through a building and loan association, would cost you $11.25 per month for every thousand borrowed or $39.37½ per month or $472.50 per year which takes care of the interest and principal in 127½ payments.

Interest at 5% on $3,500.00 invested	$175.00
Payment on interest and principal of $3,500.00 borrowed	472.50
Insurance ($5,000.00 Policy)	10.00
Taxes (2%) Upkeep (3%)	350.00
Total carrying charge for a year or $83.96 per month	$1007.50

However, considerable more than half of the $472.50 will have to be deducted, for it is payment on principal and is creating a saving. Therefore, one can consider that it costs him about $60.00 per month to live in his own home and $70.00 per month to rent the same home, and he has the satisfaction and convenience that can only be attained from a place he is financially interested in. It costs $10.00 per month less to own one's home, and at the end of a ten year period the homebuilder will have a deed to satisfaction instead of a file of rent receipts.

FINANCING THE HOMEBUILDER

THE question of finance is basic, sometimes tragically so, sometimes happily so, as most of us can testify. We may infer from history and tradition that the proverbial mare didn't budge until there was in sight somewhere a considerable stack of the necessary evil. And we may likewise infer from the same chronicles that money made the mare go. Without this essential commodity, there is literally "nothing doing", and the homebuilder's project is not the exception that proves the rule. The homebuilder must have money or he must have credit, and credit is only another name for money in one man's hands and an equivalent disposition and ability to pay in another's.

It takes money or credit or both to build a home. And there is no more commendable and advantageous use that credit may be put to than that of building a comfortable, convenient, well-appointed, well-appearing shelter, for a shelter it is in more ways than against sun, rain and storm.

A community of home owners is invariably a more substantial community than one of transients and renters. A superficial reason assigned for this is the fact that those who have acquired the habit of saving are more likely to be of a more reliable and substantial character than those who are constantly shifting and thriftless. This is true, but by actual investigation and statistics it is proved that the shiftless, floating, transient population is an effect rather than a cause, and the cause lies in the fact that such people have never had the opportunity of developing an appreciation for those finer sentiments which, be it the "lowly, thatched cottage" or a palace, the home fosters and cultivates.

Fine sentiments do not cluster about elaborate business blocks or expensive automobiles. But like the ivy that twined about the portals of the old home, so cling the sentiments born of those wholesome relationships of father, mother, brothers and sisters—the sentiments of home—sentiments which can take root and mature in character in that permanent place of abode—the home.

No man need, therefore, apologize to himself or anybody for working his credit to full capacity in the attempt to establish an institution that gives strong guarantee that those for whose existence he is responsible may go lifeward fully imbued with those sentiments which make for vigorous, courageous, neighborly manhood and womanhood.

Every homebuilder adds another unit to the stability and strength of the nation; just another bit to the welfare of his state; just another guarantee for the safety and well-being of his own community.

The nation, state and community are wise which offer liberal encouragement and afford liberal inducements to the homebuilder. There is no place in our social and industrial life today where a most liberal, though rational credit scheme may be made to accomplish more, or nearly so much, as in the encouragement of the building of homes. The homebuilder who uses his credit to the end that he may have a permanent place of abode, serves himself well, his family better, and his community and country best, for he provides for his own future, he gives "his own" the benefits that come of permanent and strong ties of sentiment, and he roots deep into our American soil the generation that is to come.

It has been this last consideration that has given impetus, especially since the war, to a nation-wide encouragement of the homebuilder.

A number of years ago the question of owning one's home involved the possession of sufficient capital to build or purchase what one had in mind, but in recent years the amount of assistance available to the prospective homebuilder has come to be almost unlimited. A great number of institutions have been organized in this country for the purpose of assisting in financing homes. These building and loan associations, as they are called, are co-operating with lumber and building material dealers to further a campaign which has been started by the government "to own your own home" and which has greatly stimulated homebuilding because it has been the means of pointing out ways in which the homebuilder could receive financial assistance of which he was not aware.

Many builders who otherwise have not considered the owning of a home as a possibility, have been informed of ways and means to realize this desire and are beginning to discover that it is much less difficult than they had supposed.

Before going ahead with any program of financing the building he should inform himself on the subject of selecting the site and decide on the size and character of the building he proposes. He should determine the amount of money his income and necessary expenses will allow for the program. The fact that the builder has employed expert advice in matters of plans, specifications, etc. will at once inspire those in the business of loaning money for homebuilding programs with a confidence in the security the builder has to offer, for they know that dollar for dollar, there is far greater value in a home planned and designed by an expert than a novice.

With the lender, it is not so much a question of how many dollars the builder puts into a building as it is a question of how much convenience, durability, good taste and resale value he gets for his money. He thinks of a five-room home in a good location as a better risk at three thousand dollars than a seven-room home in a poor location at the same money. Therefore, it is advisable, before making application for a loan, to decide on the building site, select the home and be able to furnish with the application for a loan, a set of plans and specifications of the home one proposes to build. As stated before, this will inspire confidence in the sincerity of the borrower's proposition. How, then, shall I finance? There are three ways in which this may be done: First, through banks; Second, through building and loan associations; Third, through an insurance home purchase plan which is the best method, but individual cases depends entirely upon circumstances.

Bank Loans

THE first plan, of borrowing money from banks, mortgage companies or from individuals who invest in mortgages, usually means that the prospective builder will have to have sufficient funds available which are equivalent to one half the cost of the lot and building when completed. A first mortgage on the property is then given as security for the money. In financing your building program in this manner it is always well to consider that a mortgage must be renewed from time to time and therefore it is always advisable to consider the attitude of the lender toward a renewal. First real estate mortgages allowed by the banks are usually for a short term, that is, on a from one to three year basis and at the expiration the full sum is due and will have to be paid or arrangements made for its renewal. It is usually stipulated in the contract that a certain percentage of the loan is to be taken care of each year. In some communities where property values are especially good, financial institutions are operated which will handle second mortgages providing the prospective builder's funds do not amount to one-half of his building investment. Second mortgages usually run for a shorter time than first mortgages and sometimes, due to the additional risk, carry a higher rate of interest.

Building and Loan Associations

ALMOST every city of any size in the United States has its own local building and loan organization each with rules and regulations peculiar to itself. The amount of money you will be able to borrow on this plan ranges from 50 per cent to 80 per cent depending upon the borrower's reputation or integrity and a multiplicity of considerations stipulated by state law and directorial regulation.

In case the prospective homebuilder has little or no accumulated capital, the building and loan association offers the quickest and safest plan. This method of financing homebuilding programs has many advantages and not more than one serious disadvantage. It enables the borrower to acquire a home at a monthly outlay of not more than what he would have to expend in rent. There is not the risk of having to meet an impossible interest bill every six or twelve months or a large lump sum at maturity of the mortgage. Moreover, in the event of the borrower unexpectedly finding himself able to pay prior to the maturity of the mortgage he has that option at any time. In fact, most of the building and loan organizations, while operating primarily for the purpose of realizing dividends, are so liberal in their option provisions and in the administration of their policies that, except for the minimum monthly payment required, the borrower is left to do about as he pleases as to the time of maturing his contract, even in matters of taxes, insurance and in some cases upkeep the loan company will assist him in getting by a period of special stress.

A membership in a building and loan association is necessary to participate in its benefits. It is operated by and for its members only. A membership means that you purchase shares in the association which may be paid for on a monthly or weekly installment plan. These payments participate in the profits of the association, compounding quarterly or semi-annually according to their rules. When sufficient stock has been paid up by the accumulation of payments and accrued profits, a member may get a loan by signing this paid up stock to the association and may give a first mortgage to the association for the difference between the value of this paid-up stock and the total sum he needs. The amount required to be paid-up varies from 20 per cent to 50 per cent of the total valuation of his house and lot. From this time on, the borrower is required to pay: First, monthly installments to complete the payment of the remaining shares he has subscribed for; Second, monthly interest installments on the loan, and Third, monthly installments on the loan equal to his interest payment. When these payments equal the amount of his loan, the borrower surrenders his shares to the association and receives clear title to his property. Payments are usually made up extending over a period of about ten years. The writer is familiar with an association whose plan is to loan money which is to be repaid by making monthly payments of $11.25 or weekly payments of $2.59½ on each one thousand dollars borrowed. Your interest is decreased each six months and your loan is paid up in ten years seven and one-half months.

Insurance Home Purchase Plan

A NUMBER of large insurance companies are developing, in different parts of the country, as a subsidiary branch of their insurance features, a plan proposing the following scheme for financing homebuilding programs projected by their policy holders. It provides for a ten-year, six per cent mortgage on completed homes repayable on an easy monthly installment basis. Life insurance to the amount of the loan is included to protect the dependents against the burden of the debt and the insurance company as mortgagee. The plan incorporates all the salient features of the building and loan organization and the additional safeguard against the loss of home that might result from the death of the party assuming the obligation. This plan is an excellent one and has many advantages and only one disadvantage which is that you are obligated to have your home completed before you are able to secure a loan. This objection may be overcome by securing temporary assistance until your home is completed.

Example of this home purchase plan is given on a three thousand dollar mortgage with the borrower aged thirty years. The mortgage runs ten years to maturity. It will require one hundred twenty monthly payments of $39.60 each which totals $4752.00. The difference between the mortgage of $3000.00 and the total payments is $1752.00. Less the cash guaranteed value of the policy $360.00, the cost of interest on a three thousand dollar mortgage together with ten years of insurance would be $1392.00. Refunds on the policy during the ten years' period would further reduce the cost. Outside of the fact that you are securing a mortgage for an exceedingly low rate of interest, this plan carries a very desirable feature in that if at any time during the life of the contract, the borrower should die, the insurance feature returns a clear title of property to the dependents together with the amount of money paid in on the contract at the time of death.

SELECTING THE LOCATION

To Have a Satisfactory "Home" You Must Have a Desirable Location

THERE is a strong instinct in everyone's nature which, sooner or later, expresses itself in the desire to own a place called "Home." Even in the lower animals this instinct finds expression in the favorite haunt, lair, den or nest. The wounded animal drags himself through the jungle to the spot where he has reared his young—his home—a place of sympathy and protection. The prodigal returns to the spot where love and sympathy and tender care once ministered their healing balm to his suffering body or his distressed mind. When the world of mere acquaintances manifests its impersonal regard for him, he casts a backward look toward that threshold where real friends once waved him good-bye, and he finds himself instinctively retracing the long trail that leads—Home.

Home—about that place cling all the sentiments of the family relationships—husband, wife, father, mother, daughter, son. There we laughed and cried and hoped and feared with those who loved and understood. There we found our friends; the rest of the world have been our acquaintances. With such attachments, such memories clustering about the place called "Home" it is not inconceivable that the instinct of the lower animal finds a refined expression in the higher—a desire for a home. And it is in this institution above all others that the character of the nation is being determined and its destiny moulded. That the home, then, shall fulfill its proper function in the life of the individual as well as that of the larger group, many factors enter into consideration when one is about to build a place of permanent residence and not the least of these is the selection of a site.

The Lot MANY a purchaser makes the mistake of selecting a lot not in the least desirable for the home he has decided to build. One should take into consideration the advantages and disadvantages of the location before making a decision.

The homebuilder should not be hasty in selecting a site. He should take into consideration the desirability of the location, the proximity of efficient schools and the possible annoyance from nearby factories, and above all, the neighborhood from a social standpoint.

Neighborhood is a matter of vital concern to the home owner. Desirable real estate is bound to increase in value. If conditions exist in a neighborhood or locality that will tend to decrease the value of real estate located therein, the owner should be fully aware of the fact, and either avoid the neighborhood, or be reconciled to those undesirable features.

Buying a lot because it is cheap is poor economy. A few hundred dollars more in the cost of A-1 location is money well spent, as it will be one strong talking point should the owner ever wish to sell or rent. This question of selling is seldom considered by owners. Yet the convertibility of the proposition into cash is a very important one. While there may be no immediate possibility of a desire to sell, the foresighted purchaser sees a possible pressing need and where circumstances permit lets that thought guide him in his purchase. In short, the careful business man does not disregard wholly the possibility that some day it may be desirable to convert the material, time and labor expended into cash.

Utilities DUE consideration must be given such utilities as water, sewer, gas and sidewalks. One should be sure that they are convenient, or that they will be when he is ready to build. Often times real estate dealers who are selling a new subdivision when water and sewer have not been installed, can satisfy the prospective builder by having him interview the city or village authorities and find out if the necessary legislation has been passed and that they will be installed within a given time.

Telephone and electricity are now so nearly universal that they hardly need be considered; but in many cities the growth has been so rapid that many builders have been inconvenienced because the Municipality or Public Utilities Companies have not been able to keep up with all installations. Gas is a convenience so desirable that one must decide whether or not it can be dispensed with if not available.

Do not underestimate the value of good shade trees. They are often the most valuable part of your investment and if properly cared for may add hundreds of dollars to the value of your property. It takes a number of years to grow the species of tree generally used for shading home sites. A healthy, full-grown shade tree will add from One Hundred Dollars to Three Hundred Dollars to the value of a lot.

Restrictions or the lack of them have often been the making or unmaking of many a community and the more rigid or strict they are the better it is for any location and for the individual holder. These restrictions should cover the cost of the home to be constructed and the distance from the front and side lines of the lot to insure proper character and position of buildings.

A very important restriction that should be specified is that the house line should not be less than so many feet from the walk or road. By the house line we do not mean porch line, as your property might be ruined if someone builds a house and cuts down on the size of the porch or places the porch on the side or rear, thus allowing the house to be up in line with the rest of the porches on the street and ten or twelve feet ahead of the other houses. In a restriction of this kind the porches are usually allowed a width of ten or twelve feet, and if a wider porch is planned, the house ought to set further back. The height or grade or the distance from the sidewalk line to the top of the foundation should be specified to insure the lawns all being on the same level. Ordinary fences should be kept from the front half of the lot

or at least from the part in front of the house line.

Most cities have or are forming Town-planning Commissions or committees for the purpose of zoning and regulating building. The necessity not only of wise regulations but of strict enforcement of these regulations is very important. Under a zoning by-law the character and the density of the building appropriate for different parts of the city are determined. At the present time these important factors too often are left to the caprice of the subdivider, whose main object frequently is to have as many feet of frontage as possible, or to that of the purchaser whose concern may be to bring the greatest return for his investment regardless of the effect on neighboring property.

But even under a policy which provides that each development shall conform in character to certain general principles of town planning which have been laid down, constant vigilance must be exercised if abuses are to be avoided. An unsightly garage, an addition to the front of the house, or the crowding in of an additional house may destroy the appearance of a street and seriously impair the community pride.

Zoning ZONING has an additional advantage in that it tends to stabilize land values. The element of uncertainty which retards the improvement of property and invites speculation is eliminated. Factories are assigned to certain areas which are determined by experts to be best suited to manufacturing; other areas are set aside for business, wholesale and retail, and still others for residential purposes. When this is done, property owners feel a confidence in maintaining improvement which is otherwise wanting.

Cases will occur to all of you where a single factory or garage has invaded a residential street for some more or less accidental reason. A slump in land values has been the result because the locality was no longer pleasant or healthful to live in, and houses have been put to uses to which they were ill-adapted, or changed over, or left vacant to the loss of the owners and the community.

The rapid growth of the automobile industry has created a desire for operators of garages and filling stations to seek locations in districts otherwise considered strictly residential, and in cases where there is no law protecting this encroachment, litigation has been carried to the supreme courts to determine the right of using residential property for purposes of this kind.

The homebuilder should avoid locating near mills, factories, shops, stables, blacksmith shops, cemeteries, sanitariums, medical colleges, noisy thoroughfares and the like. These may not be objectionable to the builder, but they will affect the future sale of the property should he ever desire to dispose of it.

Of course, in many instances, there will be exceptions to this rule, as in some new locations houses and property located near factories, mines, etc., are much more in demand and more easily disposed of.

When selecting your lot, keep in mind the size and kind of a home you desire to build, as it is necessary to select a lot that will fit the house or select a house that will fit the lot. In many cities the original plotting was done so that many of the lots do not run at right angles to the street. Sometimes this angling of the property will not allow you to place the home you desire to build within the lot lines and have sufficient room for driveway, walks, etc. We are familiar with many cases where it was necessary to purchase additional property to accommodate the type of home planned. It is money well spent to hire a civil engineer to make a survey of the property before you make the purchase, as this will save you any trouble in case it is necessary to locate any part of your project on the lot line. Without a definite knowledge you might extend your fence, drive or garage six inches on the adjoining property and might be requested to correct your error at a big expense.

Consider, when buying your lot, its level compared with the sidewalk and the surrounding improved property. The price of a certain lot may look reasonable but it may be necessary to spend from Three Hundred Dollars to a Thousand Dollars to fill it in. This added to the apparently cheap price may not be in keeping with your means.

The object of homebuilding is twofold: First, to secure income; Second, to secure comfort and convenience. The builder who is an investor cares little about the comfort and convenience of the property except that it return him a greater income, and his every effort is to conserve toward an increase of dividend. The owner who builds a residence will seek the maximum comfort and convenience, and will sacrifice money to secure them. Therein lie the determining factors by which one must be guided: First, dividends on an investment; Second, comfort and convenience.

The purchaser should be sure that the property he is interested in has a clear title. If he is not familiar with abstracts and conveyances, he would do well to employ someone who is conversant with titles to look over the papers offered him for his money. Often property is encumbered with back taxes, which, if they are not settled before purchase is made, he will be obliged to pay.

While not in the least intangible, title is a matter which, to some people, is of little importance and is very liable to be disregarded. The buyer's protection is an abstract of title showing how the property stands on the records. If one can afford the added expense, he may secure a warranted abstract of title. If, subsequently, any question should arise, the concern issuing the warranted abstract will adjust any defect at its own expense. Most reliable real estate agencies issue warranted abstracts of title with all their transfers. Reliable companies, also, in business to stay, are more interested that the surroundings be kept first class and that the property receive the advantage of all civic improvement such as park-ways, boulevards, pavements, libraries, schools, etc.

Study the real estate ads—study the property and its surroundings—make thorough inquiries into possible encumbrances—make inquiries regarding the reliability and general fairness of the company offering the property and select a location that you are sure will best suit your needs and be a satisfactory home site. If you have done these things it will always be transferable in case your circumstances, business or something else demands a change of location.

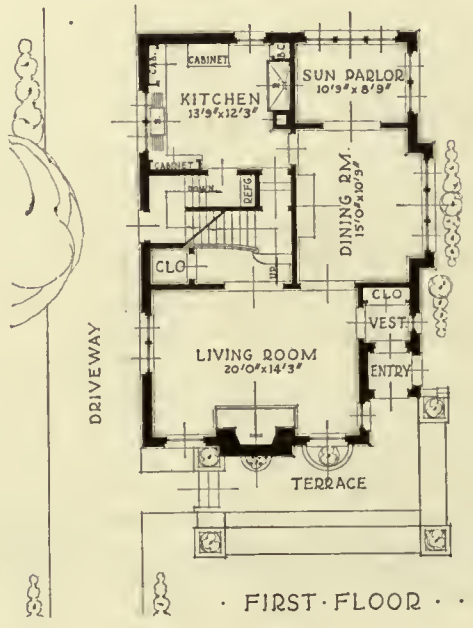


The Prescott

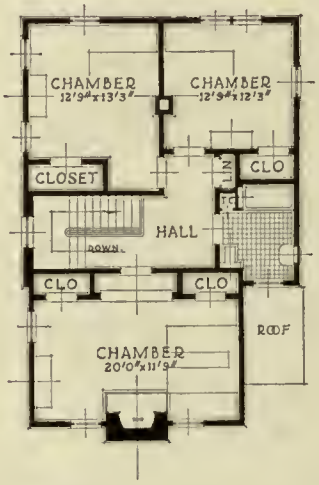
THIS home is of very picturesque design and is a solution of the problem of getting beauty into a small home. The effect gained by the use of face brick first story and shingles second story is exceptionally pleasing. The living-room is nicely proportioned, well lighted and contains good wall space.

Note the convenient arrangement of stairs and that they can be entered from the kitchen as well as from the living-room. The opening from the living-room to the stair hall can be equipped with French doors if so desired, to give added privacy to the upstairs bed-rooms. French doors are used in the openings between the living-room, dining-room and sun-parlor, which, with the well planned kitchen, complete the first floor.

Three large bed-rooms with closets and bath are conveniently arranged on the second floor. This home is 27′ wide and 40′ deep.



· FIRST · FLOOR · ·



SECOND · FLOOR · ·

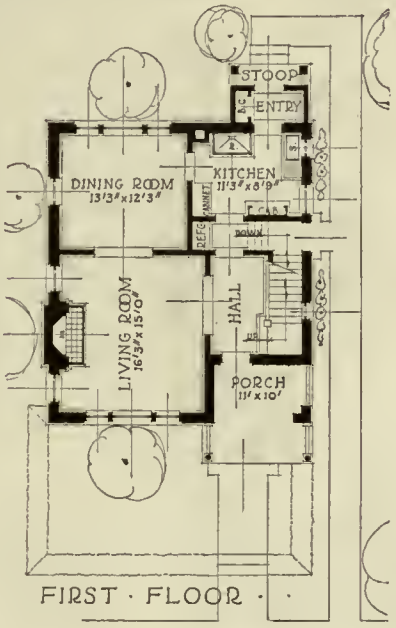


The Barrington

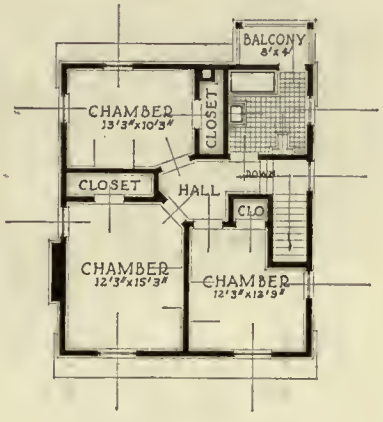
A UNIQUE and exceedingly effective treatment has been given this Dutch Colonial home. The first story walls are of face brick veneer and the upper walls of wide siding, a very pleasing combination. The inset porch, artistic trellis and porch railing, add to its appeal and charm.

From the porch one enters the hall, from which an attractive open stairway leads to the second floor. Both kitchen and basement stairs are accessible from the hallway. Off the kitchen is an entry way with broom closet and stoop in rear. The well lighted living-room with a cosy fireplace and dining-room occupy the entire left side of the house.

Three bed-rooms with roomy closets and large bath entering off the hall complete the second floor plan. This home is 27′ x 31′, which does not include the projection of the front porch or the rear entry way.



FIRST · FLOOR · ·



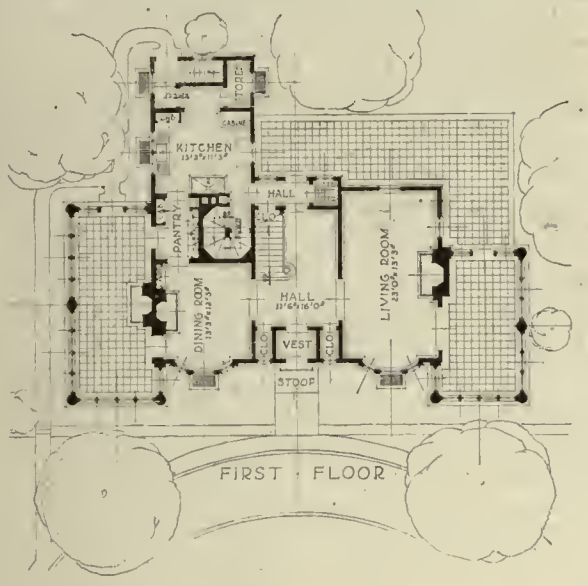
· · SECOND · FLOOR · ·

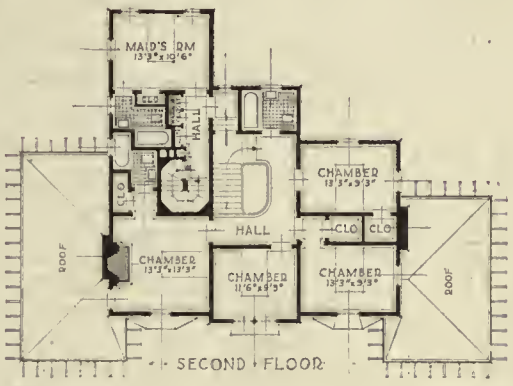


The Oakland

From the first impulse to own your own home, your Society guides you thru all the steps from the selection of the lot to the final planting in Landscape, to have a home as beautiful in design and arrangement as the Oakland.

It is impossible to add a single feature that would improve the exterior of this beautiful Colonial design. We take great pride in devoting additional space to illustrate the floor plans and photographs of this home, for it is hard to express in words the pleasing effect gained by the use of wide Colonial siding for exterior wall covering and the scrolled brackets over the porch roofs.





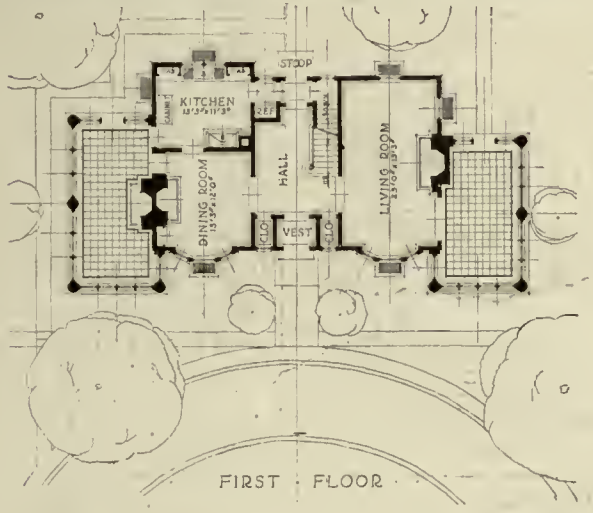
PLAN "A"

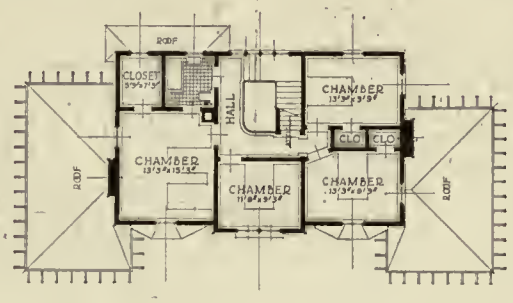
In another part of "The Homebuilder" we quoted, "The first sure symptoms of a mind in health, are rest of heart and pleasure felt at home." Spend a few moments looking at the illustration on the opposite page, then close your eyes and visualize in your mind this beautiful design painted white or ivory, with green shutters, with tile red or moss green roof and you see immediately the difference between *house* and *home*.

The floor plan of Plan "B" comprises living-room, dining-room, kitchen, vestibule and hall downstairs and four bed-rooms, bath and large closets on the second floor.

Plan "A" is enlarged at the rear of the kitchen and hall, which adds another bed-room and maid's bath.

Each plan has the same enclosed porch construction. The porch on the right makes an attractive sun-parlor and the one on the left is conveniently arranged to be used as a combination breakfast-room and sun-parlor.





PLAN "B"

SELECTING THE HOME

The Value of Plans, Specifications, Quantity Surveys, Etc.

IT IS difficult—yes, practically impossible, to advise anyone as to the style of home that will meet the requirements of his individual needs, financial ability and taste as to style and quality. Everyone has his own individuality; which means that among the nearly three thousand millions of people who inhabit this sphere of ours, no two agree in their ideals, their habits of mind, and their artistic temperaments. It would, therefore, be impossible for anyone, however expert he might be, to formulate a plan that would meet the requirements of any individual, in the selection of a type of home such individual may be contemplating. A volume which would undertake to individualize would at once face the task of making the personal acquaintance of every client, of studying him, of knowing at first hand the peculiar traits and mental habits which make him an individual among millions.

Would this individual like a bungalow with a low pitched roof and wide over-hanging eaves? Or would he prefer a brick cottage or a Dutch Colonial with wide siding? What style of architecture would he prefer? What color scheme appeals to his imagination? What expenditure is possible? What number of people must his home accommodate? All these questions and a thousand more would have to be decided upon definitely before those in counsel could intelligently advise a client in detail.

Fortunately, there are a few general principles which obtain in the construction of all homes of whatever size and design. If these few principles are allowed to guide the homebuilder, his initial mistakes and his later dissatisfaction with his plans and their execution will be reduced to a minimum.

Design is important. The floor plans should make for convenient arrangement of properly proportioned rooms. Wall space should afford ample opportunity for the placing of furniture. Windows should admit sufficient light to make the rooms cheerful, and yet not unnecessarily reduce wall space. Doors should be placed with this consideration in mind, and at the same time should provide the most convenient passage from inside out, and from room to room. The living-room and dining-room should be in a position to receive the morning and afternoon sun. And all these advantages should be had with the greatest possible economy in materials and the maximum of comfort and convenience.

With some variations, of course, the appearance of the exterior of the home is guided by the interior arrangement and its success depends largely upon proper proportion and the selection of good materials. "Ginger-bread" is expensive and is never to be confused with good taste. The well planned home must contain a combination of good ideas, good arrangement and practical knowledge in order to effect exterior attractiveness, and interior convenience that provide for home satisfaction. Above all, don't rush headlong into the matter. Study the subject from every angle for there are many important things to consider when selecting the design of home one wishes to build. The amount of money available, the number in one's family and their requirements, the location of the lot and the nature of surrounding buildings are all items which must enter into consideration. It is not advisable to build a home that costs more than one can afford to pay for reasons that are entirely too obvious to need mention here. It is always good policy to be able to finance at least from 30 to 40 per cent of your home and be sure that you are in a position to meet the contracts on the balance. The number in your family and their requirements; a thought here is important, for in most cases it is difficult to increase the size of any design without destroying some of the original exterior attractiveness. Then, the location and size of your lot and the nature of surrounding buildings will have an important bearing on your plans and designs. This size of the lot may make it necessary to use a narrow type or it may have considerable frontage with little depth, in

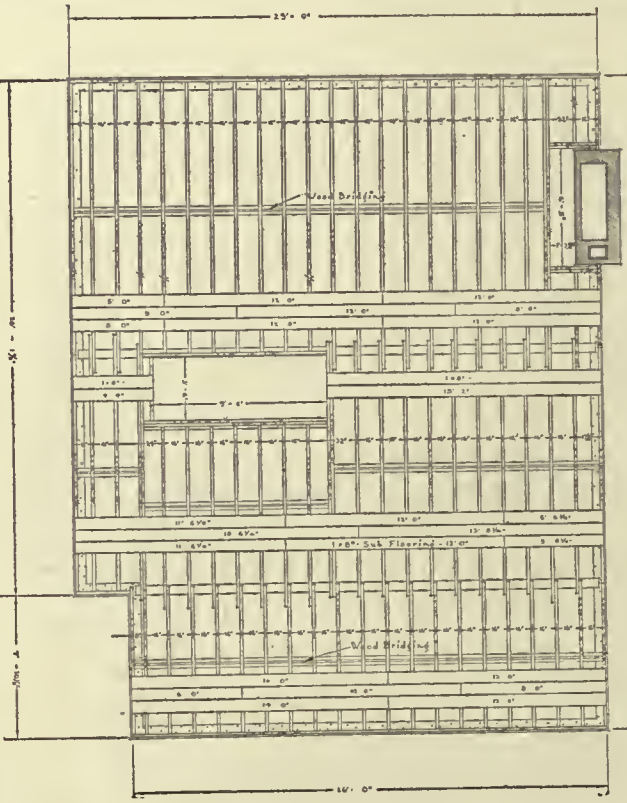


FIG. "B"
Framing of floor joists

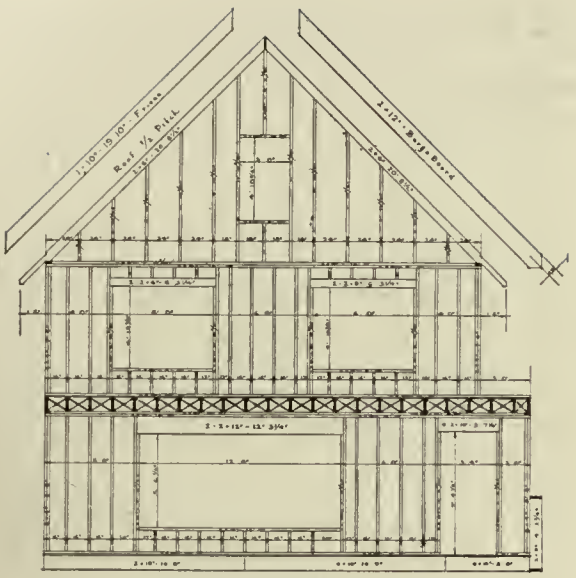


FIG. "A"
Size, length and position of stud in outside wall

which case you will have to select a design with the greatest dimension facing the street. Moreover, it is important that your plans will not deprive you of the necessary room for driveways, walks, etc.

The design and position of surrounding buildings should be considered. It is very poor judgment to place a low, squatty bungalow next to a two-story house with a high pitched roof. This is very bad taste, for the high house will make the bungalow look much lower than it really is and vice versa. Nothing is more appealing to one's artistic sense than a row of houses which not only contain individual attractiveness, but whose combination forms a street or boulevard of character.

Value of Plans Does it pay to build a home without a set of plans? Decidedly, No. Unless the building is to be a mere shell for summer use only, it seldom pays to attempt to build without the assistance of someone qualified to give advice, either in the form of carefully prepared plans which have been perfected through actual experience in construction, or by the engaging of an architect to study specific conditions and supply plans to meet them.

The purpose of the use of plans in the construction of a home is to enable one to know the exact size, shape and arrangement of rooms on the interior and to give him a fairly good idea of how the exterior will look when completed. Plans prepared by an expert will eliminate waste in materials and labor by the use of standard lengths of lumber and standard sizes of windows and doors. If a plan requires the use of special size windows or doors it practically doubles the cost of that particular unit. Standards in lumber and millwork have been adopted which will meet practically all the requirements of the average modern home.

The plans furnished by architects or architectural service bureaus usually contain two or four elevations, floor plan, foundation plan, millwork details and specifications. The plans furnished by the National Homebuilder's Society contain four elevations, floor plans, foundation plan, foundation details, millwork details and a *complete set of framing details* showing the exact size, length and spacing of all joists, studs, rafters, etc. They also include specifications, bills of material, quantity survey and instructions for erection. Complete plans are also furnished which cover the installation of heating, lighting and plumbing. And your membership also entitles you to consult the different departments of the Society regarding interior decorating, landscape gardening, etc.

Specifications Are prepared in order to determine just what materials are to be used and the manner in which they are to be installed or applied. In preparing specifications for the homes illustrated in "The Homebuilder," we have made a comprehensive investigation of the materials which will absolutely guarantee the builder satisfaction. This does not mean that the materials listed in our specifications are necessarily the most expensive, but they are of a quality and price that will be in keeping with the type of homes on which we are rendering our service. We do not wish to say that the materials listed in our specifications and described in "The Homebuilder" are the only materials of their kind which will render satisfaction, but we do wish it understood that it is our desire to make happy, satisfied homebuilders and in order to do this we are giving you our unbiased opinion gained through years of experience in the use of building materials and equipment, and we feel that following our advice will be guarantee against dissatisfaction.

Bills of Material and Quantity Surveys The bill of material is an actual piece tally taken from the framing details which show the exact size, length and spacing of all the framing which enters into the construction of the building and is a part of the quantity survey which lists all the materials necessary to construct your home. The exact amount of lumber, millwork, hardware, sand, lime, brick, plaster, etc., is indicated and enables you to purchase only such materials as are absolutely necessary. A hundred feet of sheathing or framing material, a few brick, an extra sack of cement or plaster which has been delivered to your building site and is not necessary in the construction of your home all contribute to increased cost.

Instructions for Erection Lack of specific instructions is frequently responsible for the improper application of materials which are otherwise satisfactory. Complete information about the installation and application of all materials and equipment is given by us, from the footings upon which the foundation rests to the last brushful of paint which completes the interior decorating.

Exhaustive study was made of the thousands of records of home building gained by years of experience and the facts and best methods of application have been prepared for your guidance. You will find answered almost every question or situation that may arise in the work of building your home.

Value of Consulting Service Each member of the National Homebuilder's Society is issued a membership card which is invaluable to those who are planning to

build and furnish a home. It entitles the holder to free consultation on any problem pertaining to landscape gardening, interior decorating, etc.

If, for example, when you are first starting to construct your home you are not sure as to the exact position in which the house should be placed on the lot to harmonize with the surrounding property; the best location for driveways, garage, walks, etc.; you may not be sure as to just what plantings of shrubberies, flowers or vines will thrive best in your locality. Perhaps you find it difficult to express your tastes as you feel them when it comes to the interior arrangement of furniture and decorating of your home; you may not be sure of yourself. Right there is where your consulting certificate can help. The different departments in charge of this work are in the hands of people who have had years of experience in the planning and arrangement of artistic interior and exterior effects for small homes. This service is maintained for a single purpose: to serve our members to the end that they will become happy, satisfied homebuilders.

There is no extra charge for this consulting service, but your certificate has been registered in our different offices and is not transferable.

How to Lower Building Costs The illustrations on this and two preceding pages indicate the method used in preparing our plans to show the exact size, length and spacing of all the framework which enters into the construction of our designs. We have two reasons for including this additional service with our plans. The first is that years ago it was customary for a man who wished to become a carpenter to serve from three to four years as an apprentice and if, at the end of that time, he was considered a good mechanic, he was issued a union card, and by employing his services you were reasonably certain that his work would be satisfactory.

Today, the increased demand for building mechanics has made it necessary, in a great many parts of the country, for men to be employed in many of the building trades who have not had the experience necessary to qualify them as good mechanics. They do not know, when framing the top of an opening with considerable span, whether it is necessary to use two 2x4s, two 2x6s or two 2x12s, or whether the weight above really requires a steel "I" beam. They do not know, when framing a roof for wood shingles or tile, whether it is necessary to use 2x4 rafters on 24-inch centers, or 2x6 rafters on 16-inch centers.

When work is let to men of this calibre, the strength of the frame of your building is questionable and we have, therefore, eliminated any possibility of dissatisfaction by indicating the proper size of materials to be used, and the position necessary to assure properly constructed framework.

This method of preparing plans and bills of material saves considerable work in the erection on the part of the carpenter or contractor, for he knows, before starting the erection of the building, the exact number of pieces of each size necessary and the miters and cuts of all rafters, etc. It enables him to plan his work so that lost motion is reduced to a minimum. This saving in time results in the saving of dollars to the homebuilder.

Our second reason for showing complete framing details is this: every year the manufacturers of lumber are confronted by a larger percentage of "shorts" which has been caused by the gradual depletion of the forests and the increased value of lumber. This short length stock ranges in length from 3 to 10 feet and until the present time no effort has been made to use it in connection with the construction of small homes. The only outlet the manufacturer would have would be through the retailer who could not handle it because the consumers, carpenters and contractors have not been educated in the use of it in the construction of homes. The tendency of the average carpenter of today if, for example, he needed four pieces of 2x4 four feet in length, would be to order a sixteen-foot length and waste the time necessary to make three saw cuts. By using short length stock, it can be obtained in a better grade and at a much lower price. From 30 to 40 per cent of all the studding, sheathing and siding which enter into the construction of a small home can be billed in lengths from 3 to 10 feet long. By furnishing complete framing details, your carpenter or contractor knows exactly where to use this short length stock to advantage and, by so doing, is effecting a big saving in your lumber bill.

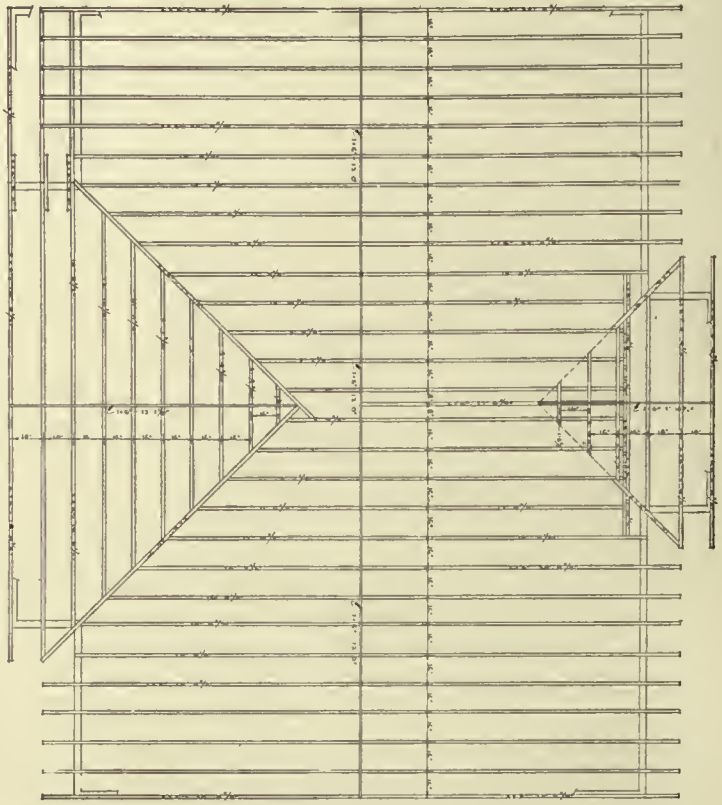


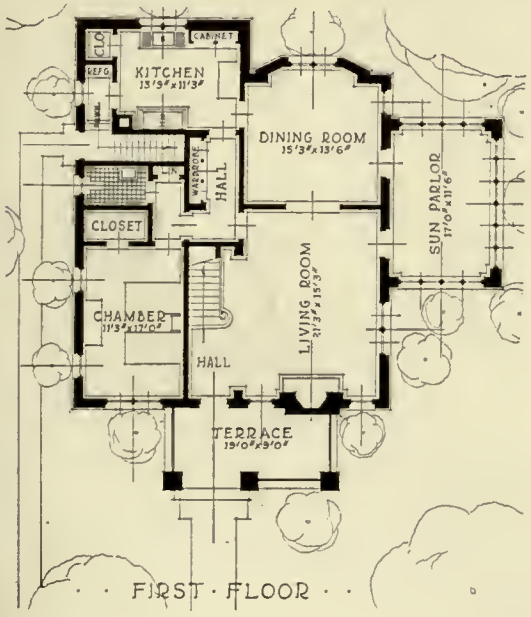
FIG. "C"
Framing of roof rafters



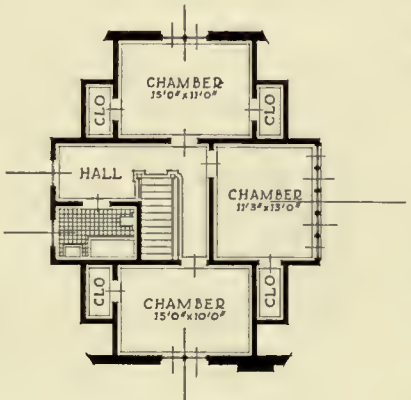
The Brewster

EVERYTHING that is to be desired in a home has been incorporated in this one and a half story face-brick bungalow. Its exterior is attractive from every perspective but it is exceptionally well planned for a corner lot or an inside lot with a frontage of from 75 to 100′. Face brick, its value and comparative cost has been explained, but "The Brewster" exemplifies the beauty and sturdy appearance which can be obtained by its use in the building of a small home.

In both floor plans every foot of floor space has been designed to its best advantage. The first floor contains living-room, dining-room and sun-parlor, all connected with French doors. The downstairs bed-room, with a large closet, is given added privacy by the well planned hall containing a wardrobe, linen-closet and lavatory. The kitchen is ideal for step-saving. Three bed-rooms, large hall and bath complete the second floor plan. Size 35′ by 43′.



· · FIRST · FLOOR · ·



· · SEGOND · FLOOR · ·

A GUIDE TO GOOD CONSTRUCTION

Good Materials Plus Good Construction Effect Saving and Eliminate Waste

THE most important consideration to the home-builder is, naturally, to be able to secure a home properly constructed of good materials at the least possible expenditure. However, there are many dangerous pitfalls before him if he considers his project from a price standpoint alone. For example, we will consider that you are contemplating the construction of a home which is estimated to cost $8000 but, due to changing specifications and to the placing of your contract with the lowest bidder and to your not taking into consideration the quality of materials and workmanship to be furnished, we will suppose you have been successful in completing your project for $7000. Your first thought might be that the $8000 bid contained excessive profits or high prices, but in the end you will find that the $7000 home will prove to be the more expensive due to an inferior class of materials, poor workmanship and the constant need of making repairs.

If you are consulting honest workmen and contractors, it is easy to believe that they are naturally interested in giving you the most satisfactory job possible for the money you wish to spend. In other words, you are very apt to receive just what you are willing to pay for. The only way in which the low priced contractor can fulfill his contract is by cutting corners on the actual money which he spends in labor and material. The homebuilder is certainly not interested in materials and labor which, six months after the material has been assembled and the work done, are in such condition that he must start making repairs. The money which was saved in the original cost will soon be expended in this way. If you use poor materials and employ the poorer class of mechanics you do not have any guarantee that your furnace will properly heat your home, that your roof will not leak, your plaster not crack or your paint not peel. You cannot blame the materials and, in reality, you have no come-back as you are very apt to have received just what you were willing to pay for.

The National Homebuilder's Society cannot emphasize too strongly the necessity of making your homebuilding project a business proposition to the end that you receive for your money satisfaction and service and a comfortable return on your investment should you ever care to sell. The purpose of this article is to outline the different steps in the construction of a home with suggestions which we are sure will be helpful in assisting you to obtain a satisfactory, well constructed home.

Contracts IN order to build and obtain entire satisfaction and profit, and to prevent any hold-up of payments, lawsuits or delays in carrying on the erection of the building, it is essential that the owner or builder have a written contract with the contractor or carpenter which should settle the following questions: What work is to be done? What materials are to be used? How is the work to be done? When is it to be completed? What is it to cost and what manner of payment? The contracts and specifications signed between the builder and contractor should not contain conditions which involve any unnecessary trouble or expense to either party.

The best results will be obtained if the contract is made to read so as to modify all conditions in order that a feeling of co-operation to gain the desired results shall exist between the two parties. The results desired should always be visible in the wording of the contract; the means of obtaining the result should be left to the contractor.

While the contractor is under obligations, after taking the contract, to carry on the work to the best of his ability, as worded in the contract, it is well to remember that his acceptance of the contract was purely a voluntary act on his part and that he was under no obligations to take it.

It is his right to know, before he puts in his bid, just what he is expected to furnish and not be left to furnish what, in the mind of some party not interested in him, are materials of good quality or work of best quality. Nothing will bring better results from him than a feeling of mutual co-operation. As to the kinds of materials to use, it is always better to specify just what kind of material you want furnished, as the contractor, when making his estimate, might figure on one kind while you might expect another.

If there are any changes to be made in the plans, it is best to indicate them on the blue-prints and to have a distinct, written understanding with the contractor before he starts work. This will do away with the "extra" charges which you will have to pay after the job is completed and which you have not been figuring on.

The wording of the contract, while so arranged as to protect the builder from over-payment, should also be phrased in such a manner as to require a certain amount of capital on the part of the contractor, which will make it possible for him, if his capital is limited, to take care of his bills and pay his labor promptly. This co-operation is mainly for the interest of the owner, as he will find himself able to get a better class of workmen to figure on his work than when the contract seems to point to a domineering spirit. In letting contracts, the builder will find that it is not always the best plan to give his work to the contractor who hands in the lowest bid. It is seldom that satisfactory results can be obtained of a man who is losing money; generally he so manages, in furnishing inferior material and workmanship that the builder is the loser.

It is a good plan to specify a time limitation for the completion of your job. This will leave the contractor without an excuse for neglecting your

job in order to hold some other one, but it is only fair that allowances should be made for bad weather, shortages of material, etc.

With each set of plans furnished by the National Homebuilder's Society blanks of form contracts are included which, together with the specifications, enable you to reach a definite understanding with the men who are to furnish material and labor for the construction of your home. Two forms are used: one, which provides that a general contract be let to one man, covering the entire project and who is responsible for all sub-contracts; and the other, which provides for individual contracts by the builder for each step in the construction. You will have to be guided by local conditions and the men with whom you are dealing in order to determine which is best suited to your program.

Excavating As this work is largely a matter of judgment based on actual experience in this line, a teaming contractor is generally better posted as to the condition of the soil and the circumstances under which he has to work; that is, if material has to be hauled from the building site, if the soil is clay or sand. He also knows about what to expect from a man and team under different conditions on different classes of work. He generally is in a position to quote prices on the excavating by the yard, or for the job complete. It is always best to have an agreement with the excavating contractor as to where and how the dirt is to be placed; that is, if your lot is covered with rich, black dirt which you wish to use for grading your lawn, he should understand that this dirt is to be laid aside and not covered up with the clay or sand which is generally found in the bottom of excavations.

In the absence of full instructions it is best to figure to excavate a foot outside of all walls or footings in order to give ample working room for laying brick, cement blocks, putting in cribbing, etc.

Footings The footings of all buildings are determined by the size of the foundation and the bearing power of the soil. In larger buildings it is often necessary to study the soil under the footings to determine its bearing power, but in ordinary frame buildings, this is not necessary unless specified by the building laws of your city or state. It is not uncommon to find concrete, cement block or brick foundation walls which have settled and cracked, this being caused by the poor method used in putting in the footings.

Certain contractors seem to have formed a habit of using one size of footing regardless of the size of the building or the condition of the soil. This "standard" size might be all right in some cases, but the contractor certainly should take into consideration the size and weight of the building in order to furnish a foundation which will not crack and settle to the future detriment of the operation.

In some localities the size of footings for dwelling houses is governed by local building codes but, as a general rule, they should be at least eight or ten inches more in width than the thickness of the wall and the depth of the footings should never be less than eight inches in order to equally distribute the weight. Of course, it is possible to waste materials in the construction of footings, but it is a poor place in which to try to exercise economy. Cracks in foundation walls, cracks in exterior stucco and interior plaster, the sagging of doors and windows so that they will not operate properly, are a few of the many ailments caused by the construction of poor footings. Also see that proper footings are placed under fireplace chimneys, girder piers, etc. Footings under chimneys should be much larger in comparison than foundation wall footings as the height of the chimney places a more direct load at this particular point.

Drain tile should be placed around all footings for dwelling houses unless the soil is very sandy so as to carry off the water which will run down the side of the foundation wall. The tile conducts the water to the sewer and prevents it from washing in under the footings and weakening them. The tile should be covered with crushed stone. This will prevent the joints from becoming clogged with mud and will allow the water to find its way into the tile. Considerable thought should be given to this part of the foundation work as it helps to keep the cellar dry and free from moisture and water.

Foundations Too much attention cannot be given to the construction of the foundation for your home, and many things have to be taken into consideration in order to get good results. The question of the amount of moisture in the soil is an important one; if the soil is wet the water is apt to rise in the walls. If this condition is found the walls should be water-proofed. The bottom of the foundation should be carried well below the local frost line, as frost acts upon the soil and will crack the walls if they do not have bearing on solid ground not affected by frost.

Consideration should be given the depth of the sewer, so as to insure good drainage to the cellar. Many cellars have been constructed in such a manner that a great deal of trouble is encountered by the backing-up of the sewage. This is a menace to sanitation and to the health of the occupants.

Except in a few localities, where native stone is to be had very cheaply, practically all foundation walls are now being constructed of poured concrete, cement blocks or brick. A very satisfactory foundation can be constructed from either of these materials and you will have to be governed by local conditions and the amount of money you wish to spend when making a decision in this matter.

Foundations of stone, even in localities where it can be obtained very cheaply, are not in general use on account of the fact that it requires a skilled workman to lay up a good stone wall and the labor item is considerably more than that of a concrete, block or brick wall.

Foundations constructed of a good grade of common brick are in general use and prove very satisfactory. The cost of labor and material is more than that of poured concrete or cement block walls, but it is usually considered money well invested, for it makes a permanent, attractive wall.

The only objection to a poured concrete wall is the fact that it requires considerable lumber and labor to construct the forms into which the concrete is poured. If it is possible to utilize this material to

advantage after the forms are removed, or employ a foundation contractor who will furnish his own forms, this material makes a very satisfactory foundation and at a comparatively low cost.

Experience has proved that cement blocks can be properly manufactured and laid up in a wall much cheaper than any other form of building material used for foundation walls. Their use eliminates the necessity of constructing the forms necessary for poured concrete and the foundation for the average home can be laid up in about two days by four good block layers. This effects a material saving in time. Another great advantage in cement block walls is the use of forms which result in hollow walls, that is, blocks with one or more hollow spaces so constructed that their combination makes a hollow wall. This acts as a dead-air space and also makes the wall more impervious to moisture, as an insulation against heat and cold and saves material. Be sure when purchasing blocks that they have been constructed of a good, rich mixture which is necessary to make them solid and water-proof.

All foundation walls should be plastered on the outside below the grade line with a neat mixture of cement containing water-proofing or covered with hot asphalt or tar and in extremely moist soils it is advisable to use both the cement plaster and tar.

In constructing the foundation wall it is advisable to plan a convenient place for a metal coal chute. Its position, of course, will have to be governed by the location of the heating plant and coal bin but, at the same time, thought should be given so that it can be easily reached from the driveway or street.

Another very essential thing to a satisfactory basement is plenty of windows. It is not always possible to place these so that they will line up with the windows in the main part of your dwelling but, if possible, always try to place two in each wall, which is usually sufficient to supply plenty of light and good ventilation.

A very good basement window, which is fast finding favor, is the steel window manufactured by the Truscon Steel Company. This type of window is more satisfactory than the ordinary wooden sash and frame as it is practically indestructible, admits more light into the basement, is very easily operated, as it cannot swell or shrink and is constructed with additional weather-proofing features.

Lumber It is an unfortunate fact that wood, which always has been and probably always will be the most commonly used material in the construction of small homes, is the one about which exact knowledge is most difficult to obtain except through actual experience in its use. Experience has proved that certain kinds of lumber are best suited to different parts of the construction of homes. No attempt will be made to discuss the characteristics of the woods which are superior for any particular purpose owing to the fact that many parts of the country are limited to certain kinds of lumber and the chances are that you will be restricted to the kind of material available in your locality.

Lumber has more defects than any other form of building material and, owing to the fact that it constitutes a large part of your home, it is well to guard against those which are most common. Knots, shakes, checks, warping and rot are to be found to some extent in all lumber. These imperfections decrease its strength and value as a building material.

The only sound advice to be given the individual homebuilder is that you consult your local retail lumberman, look over the materials he has in stock and discuss with him those which it is possible to secure, and then purchase the most sound, well seasoned, preferably kiln-dried lumber available in your territory. Then, as soon as it has been assembled into your home, cover with paint, varnish or other coatings to prevent access of moisture. Too much attention cannot be given to the selecting of the lumber for your home, for a great many disappointing things can happen where unseasoned, shaky lumber is used. Your local dealer is naturally interested in the success of your project knowing that satisfied homebuilders will encourage homebuilding. We advise, even though your contract is to be let to a contractor, to personally secure his advice, for his experience places him in a position to give you valuable information as to the kinds and grades of materials you should use.

Framing As stated before, in the construction of a frame dwelling it is important to obtain sound, well seasoned lumber. It is also important that this material be of proper size and be assembled in such a way that you will have strong walls and rigid floors and roof over which to apply the finish materials. Economy in the sizes and spacing of materials which enter into the framework is very costly. Therefore, much of the success of this type of home depends on this part of the work. In another article we have explained that all plans furnished by the National Homebuilder's Society have been furnished with complete framing details which show the exact size, length and spacing of all materials entering into the construction of the framework. Considerable thought has been given to each individual design with the idea of eliminating waste wherever possible and to insure the builder of a frame which will be satisfactory in every respect.

Since the "fire-stop" system of framing is now most in use and meets with the requirements of most building codes it will be chiefly considered here. The old method of "baloon" framing was objectionable because of the fact that the studs extended down to the wall plate or sill leaving an opening the height of the joist and the width of the studding from underneath the building up between the sheathing and plaster thereby allowing rats, mice and cold air free access.

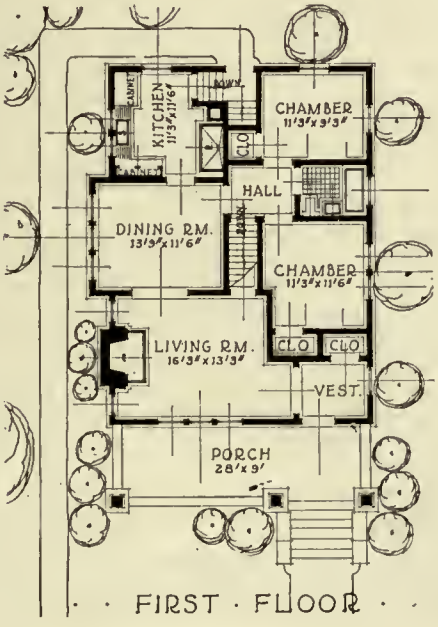
The first consideration in the construction of the framework is the wall plates and girders supporting the break of a joist. The usual method is to place a 2x6″ or 2x8″ plate on top of the foundation wall which, when levelled up, furnishes a bearing to which the joist is nailed. In some states the building codes require that this wall plate be constructed of 4x6″ or 4x8″ material. The center sills or girders should be of a size that will safely support the building. These girders can be held in place by concrete, cement block or brick piers or a gas pipe from 4 to 6 inches in diameter with a flange fastened at top and bottom is very satisfactory and requires less



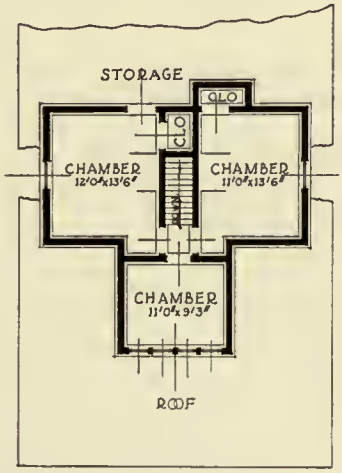
The Litchfield

THERE are very pleasing proportions and lines to this charming home. Its broad porch with roof supported by brick pedestals and square tapered columns suggests hospitality and affords a pleasant place for warm summer evenings. The main part of the house proper is 28′ wide by 38′ deep with a porch sized 28′ by 9′ across the front.

Entrance to the living-room is made through the vestibule. The opening separating the living-room from the dining-room can be equipped with French doors or a cased arch, as you desire. From the dining-room you enter the hall which separates the two bed-rooms and bath from the rest of the first floor. The bay window in the dining-room adds considerable to its attractiveness. An inclosed stairway leads to the second floor, which contains three bed-rooms. The well planned kitchen with grade cellar entrance completes this plan.



· · FIRST · FLOOR · ·



· · SECOND · FLOOR · ·

room. Proper footings should be placed under the piers or posts supporting the girder for considerable of the weight of your building is carried at this point.

Joists The joists of all floors of the building should be of sufficient size to insure a rigid floor and should be doubled under all bearing partitions and around openings necessary for stair wells. The size of joist to use will depend, of course, upon the span. The difference in the cost of using 2x8″ or 2x10″ joists in the average home is so small that it is always advisable to use the heavier joists, especially in cases where there is a question as to the weight to be carried. In rooms that are apt to be furnished with heavy pieces of furniture, such as a piano, extra precaution can be exercised by doubling up every third or fourth joist. Joists should never be placed farther apart than 16 inches from center to center.

Wood bridging should be used between the joists of all spans. One row of bridging is sufficient in spans up to twelve feet and two rows wherever the span exceeds this length. It is generally understood that bridging increases the strength of the floor so that it will carry a greater distributed load than otherwise, but this is not the case. However, it does prevent the joists from twisting or buckling sideways. The principal advantage derived from the use of bridging is in cases of concentrated load such as heavy furniture or suddenly applied live or dead load not equally distributed, then the joist directly under the weight is moderately assisted through the bridging by the joists on each side of it. In many cases this prevents the cracking of plaster.

All joists under rooms which are to have finished flooring should be covered with sub-floor sheathing. It is customary to lay the sub-flooring at right angles to the joists, but a stronger and better job is secured by laying it diagonally or at an angle of about 45 degrees. This method requires a little more material and labor. Additional strength can also be gained by using shiplap sheathing for sub-flooring, but it will require from 8 to 20 per cent more material according to the width of the boards used.

Outside Walls and Inside Partitions The outside walls and inside partitions of frame dwellings are often very carelessly assembled without regard to bracing and spacing of materials to give them the necessary strength. As much of the success and strength of your home depend upon this part of the work, it is impossible to have it too well done. The spacing of all studs should be the same as that of the joists, that is, 16 inches from center to center. Much additional strength can be gained by placing the studs over and under the joists. The reason for this is obvious as each joist will then have a stud supporting the plates directly under its bearing. Invariably, all frame walls can be erected in this way.

Double studs should be used around all openings and from two to three studs securely nailed together at the corners. All corners should be strengthened by cross bracing which is usually done by placing a piece of 1x6″ material into the studs. Considerable thought should be given the framing over the top of wide arch openings and openings which are designed to carry two, three or four pair of window sash. Cases are common where the strength necessary over the top of a large window opening has been under-estimated with the result that this weight bears down on top of the window frame and will cause the sash to bind. All walls and partitions should be square and plumb and securely fastened together at their intersection.

The outside walls of all frame buildings should be sheathed with a good grade of boards, preferably 6 or 8 inches in width. These are usually placed horizontally but diagonal sheathing is sometimes used. This is considered by some builders to add strength. This method, however, will increase the amount of material necessary as well as the cost of labor. Shiplap sheathing will greatly increase the strength and warmth of the building but will require from 8 to 20 per cent more material to take care of the lap.

Rafters In all roofs the pieces which make up the main body of the framework are called rafters. Rafters are to the roof what the joists are to the floor and what the studs are to the wall. In other words, they form the framework which supports the materials placed over it. The length of the span, the weight of the materials used for roofing and the pitch of the roof must be taken into consideration when determining the size and spacing of rafters. The material which is used for rafters should be as well seasoned and as sound as for joists and studding, and in cases where exposed eave construction is used a better grade is preferable. The spacing of the rafters on 24-inch centers is commonly used but no set rule can be applied which will meet all building codes and requirement. Rafters of 2x4 inch material are not practical except for the very lightest work. On roofs which have a good pitch 2x6 inch rafters spaced 24 inches on center and well braced will meet the requirements when composition roofing, wood or semi-slate shingles are used for roof covering. Collar beams between the rafters will materially strengthen the roof and it is sometimes advisable to furnish additional bracing by carrying supports down the bearing partitions.

When tile, slate or heavy asbestos shingles are used, the rafters should always be placed 12 or 16 inches on center and it is advisable in some cases to increase their size to 2x8 inches. However, each case will have to be handled individually if you plan on using materials which will require additional strength in framing the roof.

All roofs should be covered with a good grade of sheathing and, in cases where wood shingles are to be used, it is advisable to space the sheathing to allow the air to get underneath the shingles to dry them out after a heavy rain. With practically all other roofing materials it is advisable to lay the sheathing solid and, as is the case with sub-flooring and wall sheathing, shiplap will materially add to the strength of the roof.

Wood Shingles For many years the most popular covering for roofs has been wood shingles and this material still retains its popularity except in localities where building codes specify that fireproof materials are to be used. These codes have opened

a wide choice and the material which will best suit your particular case is a matter of personal preference. The character of the architecture should be considered to some extent but of vital concern to the homebuilder is that they should be water-proof, durable, cool in summer, warm in winter, and pleasing to the eye. The principal materials used for roof covering are: wood, asphalt, asbestos, metal, slate and tile.

The popularity of wood shingles lies in the fact that a shingled roof is pleasing to the eye, can be easily and quickly applied and harmonizes with almost any type of architecture. The best wood shingles are manufactured from cedar, redwood or cypress, these woods being particularly adapted to this purpose. Clear grades manufactured with edge grain should be selected. The durability of wood shingles is materially increased by covering that part of the shingle which will be exposed with a good grade of shingle stain. Stain is frequently applied with a brush after the shingles have been laid, but the best method to use is to dip the shingles in the creosote stain which practically saturates their entire thickness. This not only increases the durability of the shingle but serves also to maintain a uniform color.

The length and thickness of the shingle will govern its exposure to the weather. The pitch of the roof should be considered in laying wood shingles. On roofs which have ⅓ or more pitch, lay 16-inch shingles 4½ inches to the weather; on less than ⅓ pitch 16 inch shingles should lay 4 inches to the weather. On ⅓ or more pitch lay 18 inch shingles 5 or 5½ inches to the weather and on less than ⅓ pitch lay 18 inch shingles not more than 4½ inches to the weather.

Asbestos Shingles When we think of asbestos we naturally think of a material which will not burn. Therefore, shingles manufactured of this material should produce an absolutely unburnable roof. A real roof must be more than a mere watershed. It must, like any artistic thing, have texture, be pleasing in appearance, have character of line which shows thought and have color properly distributed. High grade asbestos shingles are composed of asbestos fibre and Portland cement moulded under pressure. The best grade we are familiar with are manufactured by the Johns-Manville Company and are marketed under the trade name "Johns-Manville Asbestos Shingles."

These shingles are manufactured in shapes most desirable for various roof constructions and are made in ¼-inch and ⅛-inch thicknesses in gray, red and brown. The natural color formed by the composition of asphalt and cement is a very unpleasing gray and is not altogether suitable for dwelling houses. To overcome this objection various mineral colors are mixed with the composition which, when used together, produce a very beautiful color blend.

These asbestos shingles are easily laid by any roofer or slater. This material for roofing is highly recommended as it will insure a lasting, satisfactory roof.

Slate Slate is mined along the Blue Ridge Mountains in Pennsylvania, Maryland and Virginia and also in Vermont, Maine and New York. A good slate should be both hard and tough. If the slate is too soft the nail holes will become enlarged and the slate will work loose. If the slate is too brittle it will fly to pieces in the process of squaring and will be easily broken on the roof. A good slate should give out a sharp, metallic ring when struck with the knuckles, should be easily holed without danger of fracture and should not be brittle or friable at the edges.

The color of slate varies from dark blue, bluish black and purple to gray and green. It is also possible in some quarries to obtain red slate. The richer the colors, the more attractive the appearance when used in connection with home building. This material for roof covering is durable and fire-resistant and though hot during the day in summer, it readily gives up its heat after sun-down.

Roofs which are to be covered with slate should be carefully prepared and should have a good pitch. Considerable more bracing will be needed in the framework than is necessary with ordinary roofing material and the flashings, gutters, etc., should be in keeping with the lasting qualities of this material. Copper is naturally the best material to use for this purpose. The cost of slate for roofing is somewhat more than ordinary materials but it will last from 30 to 40 years and adds considerable to the appearance and value of the home.

Tile In another article much has been said regarding the qualities and testing of bricks. This information also applies to roofing tile. Good roof tile should be well baked and sound, should withstand Glauber's Salts test and should not absorb more than 10 per cent of their weight in water. Good tile will resist the disintegrating effects of weather, particularly of frost and will retain their original deep, rich color.

Many beautiful effects can be obtained by the use of tile for roof covering. Roofs which are to be covered with tile should be as carefully prepared as for slate, should be sheathed tight and have a level surface. Tile can be used successfully on roofs as low as ¼ pitch. There is little depreciation to tile and a good quality will last from 30 to 40 years.

Siding Many attractive homes are designed with wood siding used for outside wall covering. The outside walls of the house are as important as the roof or the foundation. They should be absolutely weather-proof, leak-proof and impervious to dampness. They should last without excessive painting and should not crack, warp or rot and at the same time be capable of lending themselves to attractive treatment from an architectural viewpoint. These requirements apply to all exterior woodwork. The kinds of wood which meet with these requirements necessarily have to be of the softer grades and we recommend white pine, redwood and cypress in the order in which they are named as first choice materials for this purpose. Mr. William Noyes of Columbia University, in his publication, "Wood and Forest," has the following to say regarding these different woods.

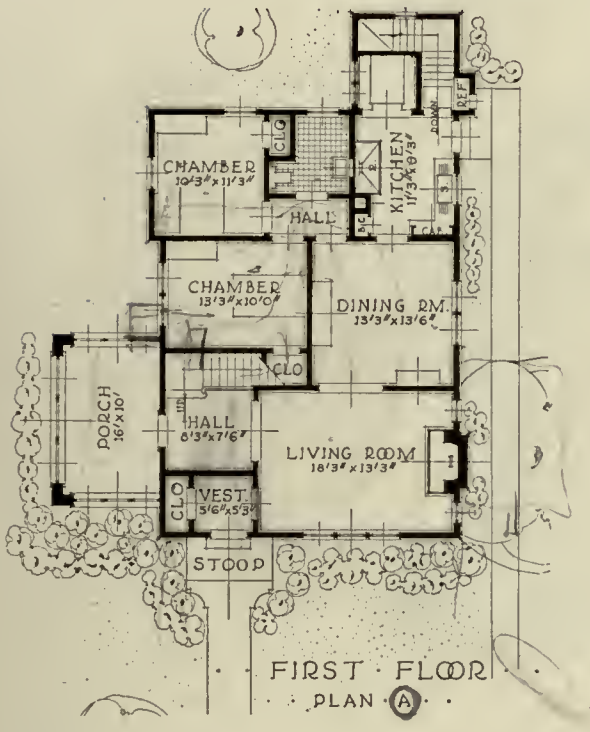
White Pine: "This best of American woods is now rapidly becoming scarce and higher in price. Its uses are due to its uniform grain on account of which

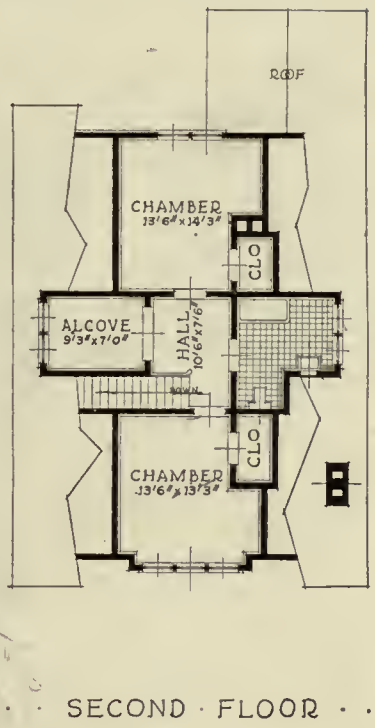
(*Continued on page 141*)



The Lexington

If you want to own your own home start to plan now

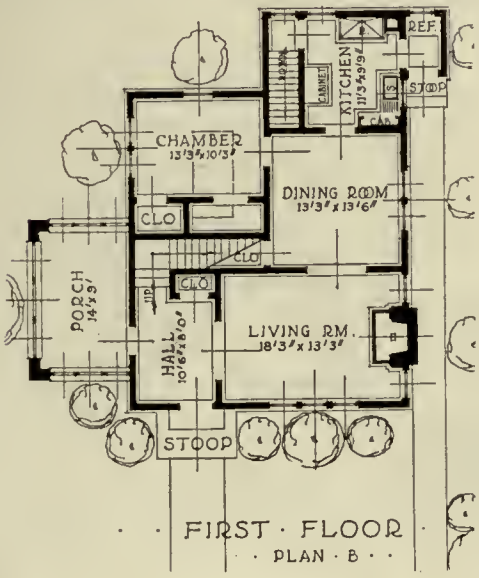


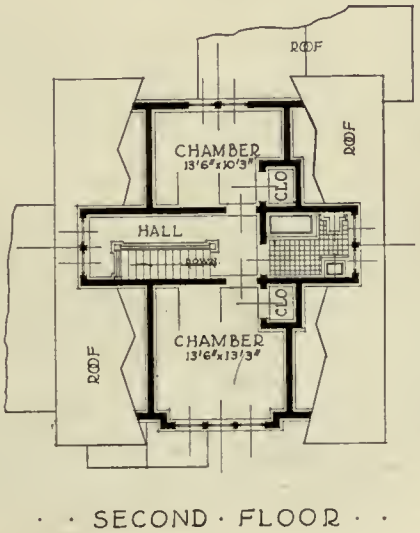


THERE is a restful charm about this beautiful home that appeals to all. It is a style which lends itself admirably to the treatment resulting from its closeness to the ground, and its shingled walls stained a pearl gray or painted white harmonize with its quaint and charming lines.

In plan "A" the hall gives access to the cosy porch wonderfully cool on summer days. From the vestibule one enters into the large living-room and in succession the dining-room and kitchen. Two bed-rooms and bath complete the first floor. On the second floor are two bed-rooms, sewing-alcove and bath.

Plan "B" though smaller than Plan "A" is very complete. The first floor contains hall, living-room, dining-room and kitchen. The bed-room on this floor is equipped with a Murphy Door Bed so it is practical for den or library. With the exception of the sewing-alcove the second floor is similar to Plan "A."





THE USE OF FACE BRICK

Durability, Beauty and Economy in the Face Brick Home

BACK in the dim past, forty centuries before the Christian Era, we find the first use of brick—the crude adobe brick houses of the dwellers along the Tigris and Euphrates Rivers. In every age since, man has, in some quarter of the globe, used brick in his pretentious buildings. The Tower of Babel, the temples of Babylon, the cathedrals of the Roman Empire, the public and ecclesiastical buildings of the Gothic Era—and so on in the march of civilization through Eastern Europe and across the Atlantic to America, brick has played its part in building the architectural monuments of history.



These ancient monuments reveal the structural merits of brick. While other materials used for structural purposes have proved susceptible to the destroying influences of the elements, on the score of durability brick has held its own, and, in fact, a little more. In his "Antiquity of Man" Sir Charles Lyell, the father of modern geology says: "Granite disintegrates and crumbles into mica, quartz, and feldspar; marble soon moulders into dust of carbonate of lime; but hard, well-burnt clay endures forever in the ancient landmarks of mankind."

Art has been partial to brick in expressing its finest architectural ideals for forty centuries. And now the modern face brick manufacturer has added an almost endless range of colors thus infinitely extending the artistic possibilities of this material. While brick clays burn to three fundamental colors, gray, buff, and red, there develops in the burn a bewildering variety of hues, tones, and shadings from light to dark.

Besides these artistic and aesthetic values, there are the necessary practical values of strength and endurance which the varieties of face brick afford—a combination which renders them at once the most desirable for all the structural materials used for building-facings. Without doubt face brick offers the best investment the homebuilder can make.

Three essential things must be considered when one enters upon a home-building program: First, Utility; Second, Durability; Third, Appearance. Of course, the amount of money available must be considered, but even here the question resolves itself into that of best arrangement, greatest durability and finest appearance for the amount of means available. In other words, for the amount of money one has at his command he hopes to get into the building all the conveniences possible—as durable a building as possible—as beautiful a building as possible—all this whether he is building himself a home or whether he is building only as an investment.

An objection commonly raised to brick is the item of expense. To the prospective builder who has avoided using face brick because of its high cost it will come as a pleasant surprise that it is exceedingly economical as a building material and within the means of the small home builder.

The following comparative costs are actual figures obtained during the past ten years in all parts of the country by manufacturers of face brick. All these figures are the bids for actual contracts by experienced contractors in various communities. The percentage of increase in cost of a face brick home over a frame structure is so small that it can hardly be considered in constructing a modern home. For example, a $6000 frame house, figuring the excessive cost at 6 per cent, would mean a $6360 face brick house.

SUMMARY OF PERCENTAGE DIFFERENCES, 1910-1922

Year	*Siding on Frame*	*Stucco on Frame*	*Face Brick Veneer*	*Face Brick on Tile*	*Face Brick on Common*
1910	0.0%	2.9%	6.9%	10.7%	9.1%
1913	0.0%	4.0%	5.9%		8.1%
1915	0.0%	1.6%	4.9%		6.9%
1919	0.0%	0.5%	4.4%	6.5%	6.1%
1922	0.0%	–0.2%	4.7%	6.2%	6.0%

Considering the durability, added charm and beauty of brick together with the expense saved in upkeep, economy is decidedly in favor of a brick structure. Depreciation, takes one bump at a brick structure and forever vacates the premises. But against other materials it finds an easy conquest and exacts a toll of 2 per cent per annum. Suppose we take the highest disparity in cost, 9 per cent, as an example. On a house costing $6000 the difference in favor of the frame building is $540. A paint job at the end of the fifth year has reduced the figure to $340. Depreciation has annually taxed the building at the rate of $120 or $600 for the five years. By the end of the fifth year the builder of a frame house is the loser by $260; but even if we made the comparison even, a brick home is a fire-proof, weather-proof and everlasting monument to the wisdom of his choice of materials.

Other advantages of brick over the frame structure are fire-safety, low insurance rates, comfort and health. Aside from the elements of security,

the hazard of death and personal injury as the result of fire, which are by far the most considerable, statistics show that fire underwriters discriminate against the frame building in favor of the brick. In cities of the first class this disparity amounts to 37 per cent and grades down to 19 per cent in cities of the fifth class. A brick wall operates against excessive heat in the summer and against excessive temperature changes in the winter. In this respect it has very decided advantages in the economy of fuel as well as in comfort and health.

A brick wall is germ-proof. Aside from the direct loss occasioned by germs there are those indirect losses which come from disease and the resulting doctor bills. A brick wall not only does not offer a breeding and nesting place for germs but it is proof against those perennial invasions which are the nightmare of the housewife. A brick wall is not at all encouraging to a rodent who will drill his way into a basement where his keen senses tell him are stored winter provisions at the cost of only a nibble.

We caution the prospective builder against the idea that every brick on the market is a good brick. Reliable quality is guaranteed only so far as the producer is reliable. There is an Association of brick manufacturers in the United States which has been organized for the purpose of keeping up standards and furnishing uniform grades and sizes of face brick throughout the country. It also protects the prospective homebuilder against any impositions which might be practiced by the irresponsible manufacturer because of the layman's ignorance of the cost and quality of brick.

We are glad to be in a position to recommend brick manufactured by members of the American Face Brick Association. When selecting and purchasing brick for your home, you will do well to find out if it is manufactured by a member of this Association. In doing this you will have an absolute guarantee of quality.

Dimensions of the standard size of face brick manufactured by the American Face Brick Association are 8″ x 2¼″ x 3¾″, but sometimes due to special conditions in the clay or burning in the kiln they vary slightly. To have a good looking job when finished all the brick should be of uniform size with sharp square edges. Good face brick should be sound, free from cracks, pores, stones or lumps of any kind, especially of lime. Good brick will give out a ringing sound when they are hit together. A dull sound indicates that the brick is soft. A good brick will not absorb more than from 5 to 8 per cent of its weight, while a poor and unsound brick will sometimes absorb as much as 25 per cent of its weight in water. After a brick stands in water for an hour and the moisture rises more than a half inch it is not a first class brick. If the moisture rises two inches its use for facing is questionable and if three inches it should not be used on any outside work of importance.

Brick Veneer This type of construction is preferred by some builders because it reduces the cost slightly when compared with solid brick or hollow tile and can be constructed quicker. In brick veneer construction the frame work of your home may be completed and roofed over before it is necessary to start the brick work.

In this type of construction the frame work is set back on the foundation walls so as to allow sufficient space on the outside of the sheathing for the veneer of face brick. The sheathing should be covered with a good grade of building paper or builder's felt held in place with wood lath or small furring strips. The face brick are set one inch from the sheathing to form a dead-air space and are laid up, so far as the outer bond is concerned, in the same manner as for facing a solid masonry wall. The brick are fastened to the frame work by metal ties, spaced horizontally on every stud and vertically on every four or five courses of brick work. For this purpose you can use corrugated metal strips with one end nailed to the sheathing and the other laid in the bed joint or thirty-penny wire nails spaced so they can be driven into the studs.

When a home is completed with face brick veneer, in all cases it has the same appearance as a solid masonry wall, and practically all of the advantages.

Bonding If, structurally, brick are 100 per cent efficient, they can make an equal claim on the side of artistic effects. We have already spoken of the great variety of textures in face brick produced by the manufacturer. This variety is such that the most diverse tastes may be met in uniform shades or, preferably, in blended shades of the most delicate and charming effects. No other building material can approach face brick in the possibility of color schemes for the wall surface, either within or without and the colors last, for they are an integral part of the enduring brick. But in your choice of texture and tone of the brick themselves, you have by no means exhausted the possibilities of artistic effect on the wall surface. You still have to consider the vital influence of bonds and mortar joints on the result. In selecting your brick, keep in mind espe-





cially the kind and color of the mortar joint to be used.

Bond in brick work is the overlapping of the brick one upon the other, either along the length of the wall or through its thickness, in order to bind them together in a secure, structural mass. Mortar is used to cement the brick together into a monolithic whole, but the real bond is the overlapping of the brick which the mortar serves to maintain. Units are shifted back and forth so that the vertical joints in two successive courses do not come in line. In other words, the brick are laid so as to break joint, the whole forming a natural bond or structural unit, giving strength to the wall.

When a brick is laid lengthwise of the wall, thus showing its long, narrow dimension or face on the surface, it is called a stretcher. If its length extends back into the wall so that its short dimension shows on the surface, it is called a header. The stretcher secures strength in the length of the wall. The header serves to form the transverse bond, that is, the strength of the wall throughout its thickness. When a brick is broken, as the case may require, the fragment is called a bat. While at certain points of the wall these bats may be necessary, they should be sparingly used and then only according to the best practices of the craft.

In the old days, and indeed up to comparatively recent times, brick bond was used only structurally, that is, to secure the strength of the wall as a solid mass, but in the seventeenth century it occurred to European builders that there was artistic possibility in the bond as it appeared on the surface. They began to see the fine tracery of the mortar joint running over the background of the brick, and by experiment found that this could be varied into very attractive patterns by different arrangement of the brick bond. As a result of this, there have been developed mainly three different types of bond which are used at the present time, with various modifications, to secure attractive effects in pattern.

The first and most obvious of these bonds is called Running or Stretcher bond (Fig. 1), The wall surface is made up of stretcher courses, having at the corners a header which appears as a stretcher on the return side. This bond has the merit of being very strong longitudinally, but lacks transverse strength; consequently, it is modified into what is called Common or American bond by laying a course of headers about every sixth course (Fig. 5.) As a type of Running bond, headers instead of stretchers may be used (Fig. 6). As this bond is very slight structurally, it should not be laid except for panels or other ornamental effects. The method of using headers, as in Common or American bond in order to secure transverse strength of wall, can be treated in a way to produce very much more pleasing effects, as may be seen in the English and Flemish bonds. The English is made up of alternating courses of stretchers and headers (Fig. 2). This produces a very pleasing series of Greek crosses and ripple lines up and down the surface of the wall, and the English brick-builders claim for it the great merit of giving transverse strength to the wall. It is modified beautifully by breaking the joints of the successive stretcher courses; this is called English Cross or Dutch bond (Fig. 3). The Dutch bond differs from the English Cross bond only in the way the corners of the wall are treated.

The Flemish bond (Fig. 4) is secured by laying each course in alternate stretchers and headers, the header resting upon the middle of the stretcher in successive courses. This produces a very attractive pattern of dovetailed Greek crosses and is a favorite among the builders because of its artistic effect. It may also be modified in various ways to produce other pattern effects. Thus is the Garden Wall bond made by laying the courses with from two to four stretchers alternating with a header (Fig. 7).

Mortar Joints In order to build a strong and enduring piece of brick work it is necessary to have some kind of mortar placed between the bricks. Therefore brick work consists of two things: brick and mortar. The mention of mortar suggests in the mind a very commonplace thing which the workman mixes and carries in a hod to the bricklayer, but it is one of the most important elements entering into the beauty as well as the strength of the brick wall. As the joints are small it is evident that only the finest materials should be

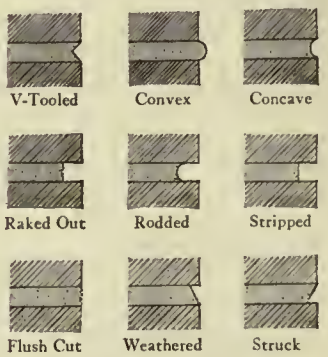


FIG. 8 MORTAR JOINTS



Fig. 1 Running or Stretcher



Fig. 2 English



Fig. 3 English Cross or Dutch



Fig. 4 Flemish

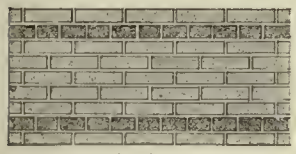


Fig. 5 Common



Fig. 6 Header



Fig. 7 Two Stretcher Garden Wall

used in the mortar. It is generally composed of lime-putty and sand screened extremely fine.

Brick should be properly dampened when laid into the wall, but not too wet. If the pores of the brick are filled with water, when the first courses of the wall are laid, the water will leave the brick and run down the face of the wall, carrying the lime or cement with it, leaving the sand on top of the bed joint making a very poor bond between the mortar and brick. The brick will also be hard to handle if they are too wet. On the other hand, if the brick are properly dampened when set in the wall, as the moisture leaves the heart of the brick a vacuum is caused which sucks the molecules in the mortar into the pores of the brick, thus making an ideal bond. If the brick are dry when laid in the wall, by capillary attraction the moisture will pass from the mortar into the brick before the mortar has time to properly congeal and as a result the mortar will be brittle. Figure 8 details the different mortar joints used in brick work. Four elements must be carefully considered in choosing mortar joints, viz., color, texture, size and kind. The wrong kind of mortar joint will destroy the beauty of the brick. On the other hand, if it is properly chosen it will bring out the fine shades and tones of its natural beauty. Colored mortar joints may be produced in two ways; First, by the use of natural colored sand, ground granite or other stone; Second, by the use of artificial mortar color. Pure white joints are obtained by the use of white sand or ground limestone or marble. When artificial color is used it should be thoroughly mixed with the dry sand. The more thorough the mixing and uniform the proportions, the more permanent and uniform will be the color of the joint. Use the best colors obtainable as cheap colors will ruin the appearance of the wall.

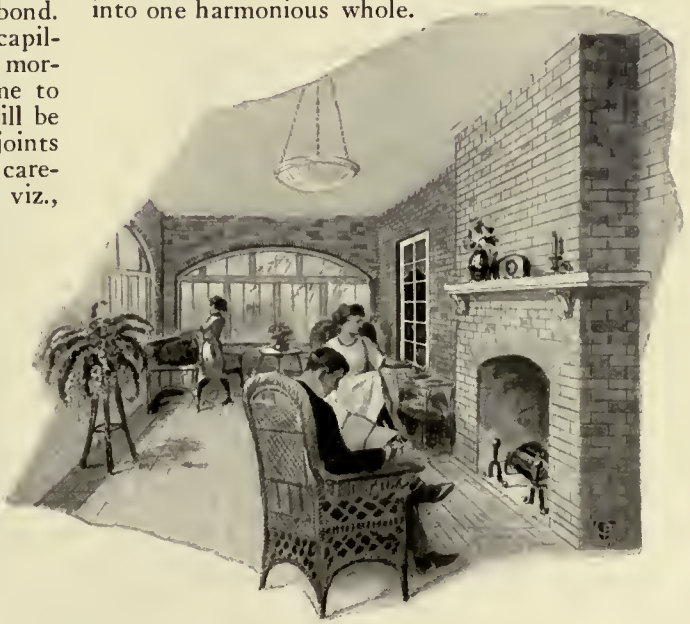
Other Uses for Face Brick We have often heard the remark from people who were starting to plan a home that they "intended to construct it around a cheerful fireplace." What is home without a fireplace? Every one loves the open fire, as there is something fascinating and pleasant about one that is lacking in any other method of heating. Not only must it be built for comfort, but must be made a spot of beauty as well. It is not necessary to sacrifice the beauty of the fireplace and mantel to have an efficient one.

There are, doubtless, many homebuilders who, at certain periods of the year, turn to their fireplaces for comfort and are disappointed as volumes of smoke enter the room instead of taking the course intended. Elaborate architectural details will not insure a satisfactory fireplace. The width, depth and height must be given due consideration. No attempt should be made to construct a fireplace without the assistance of practical details or by copying from one which has already proved practical. The faults of fireplaces are common and many and, in view of the important part it plays in the home, it must be given considerable thought in order to be successful in every detail.

The color and texture of face brick make them at once adaptable to any type of room or plan of interior decorating the lady of the house may choose.

The location of the fireplace is of great importance to its enjoyment. In most cases it is the most ornamental feature of the room and should be given a permanent position. The far end of the room, away from the entrance door where it is apt to get a cross draft, is the best location.

The possibilities of the use of face brick for floors, walks, steps, pergolas, gate posts, seats and other places about the house and garden are unlimited. For outside work it is a most permanent and beautiful material which will never crack or decay. It always retains its original color and texture the same as the home, thereby linking the house and garden into one harmonious whole.



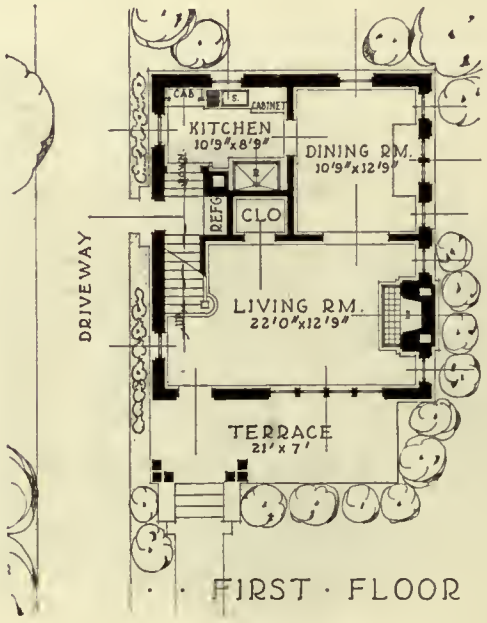


The Franklin

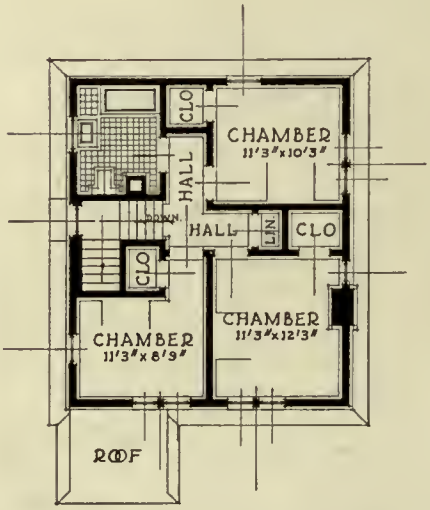
THIS style of home, often referred to as the French type, is very popular in cities, being particularly adaptable to narrow lots. A very pleasing effect is gained by the combination of face brick and shingle wall covering.

The living-room is of good size and contains semi-open stairway at one end and a cosy fireplace at the other. In the absence of a vestibule a closet off the living-room provides space for outdoor wraps. The kitchen, though small, is complete in equipment and therefore a step-saver. The space underneath the stairway is used for a grade cellar entrance.

Three bed-rooms with closets, linen closet and bath are well arranged on the second floor. This home is 24′ wide and 28′ deep.



· · FIRST · FLOOR



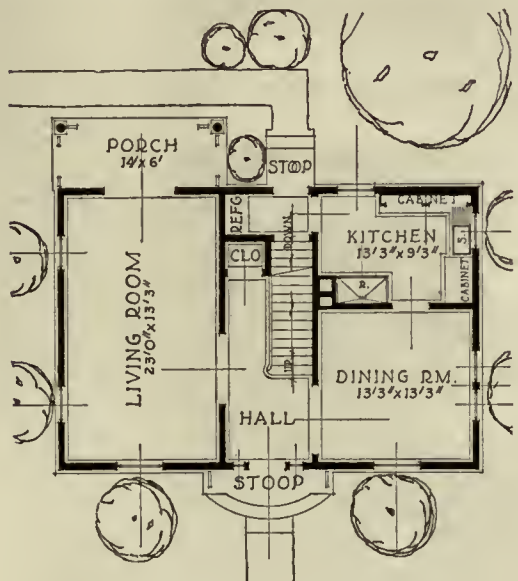
· · SECOND · FLOOR · ·



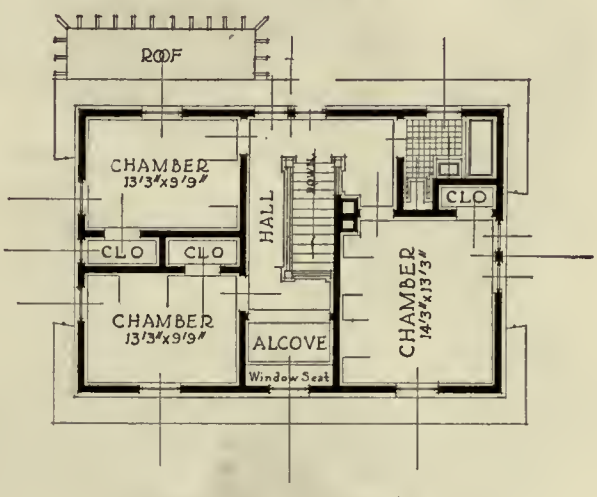
The Glen Falls

THIS home of Dutch Colonial design is attractive in its simplicity. The treatment given the entrance is in good taste and harmonizes with the balance of the home. On the left of the hall is a well proportioned living-room which opens onto the rear porch with a pair of French doors. The dining-room is all that can be desired in a home of this size and has direct connection to the kitchen, which has been laid out so there is a good place for every fixture that makes a home convenient. The rear entry in back of the main stairs leads to the basement and contains good refrigerator space.

The front part of the upstairs hall has been planned for a sewing-alcove and contains window-seat with hinged top. Three bed-rooms with closets and bath provide excellent accommodations for a small family. This plan is 36′ wide by 24′ deep and will require a 60′ lot.



· · FIRST · FLOOR · ·



· · SECOND · FLOOR · ·



The Brockton

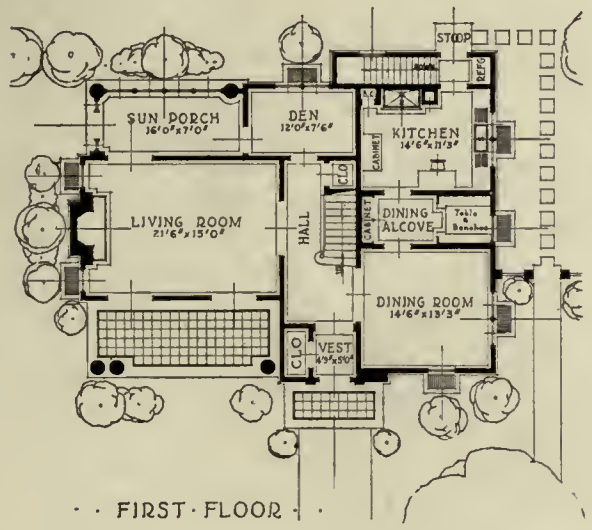
"Make your Home your hobby, live with it and in it"

HOME

I give you Home! its crossing lines
United in one golden suture.
And showing every day that shines
The present growing to the future—
A flag that bears a hundred stars,
In one bright ring, with love for center,
Fenced round with white and crimson bars,
No prowling treason dares to enter!
—*Holmes.*

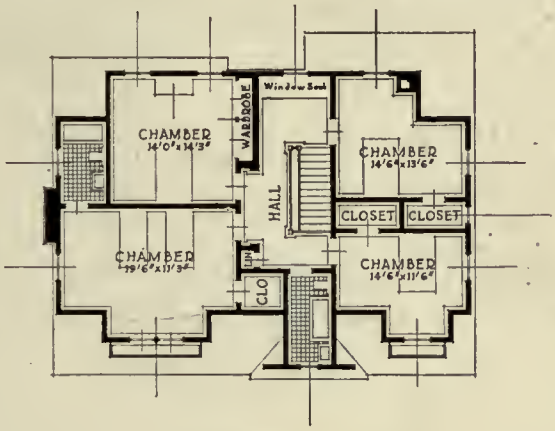
EXCLUSIVENESS of design, dignity and refinement are expressed in this attractive Dutch Colonial home. Of a totally different character from the Colonial work done in other parts of the United States was the architecture of the Dutch settlers in the neighborhood of New York. The old farmhouses also, many of which have fortunately been preserved, in the early days of the settlers in Flatbush and Flushing on Long Island, were of a type very different from the formal and symmetric houses built by the Colonial settlers of English descent.

The architecture of Holland has always been famous for its picturesque quality and blood tells in art as well as in manner. Today, this type of home is very popular. Its shape lends itself remarkably well to picturesque treatment in carrying the lines down to the ground. Careful thought has been given to the designing of window shutters, porch columns, flower boxes and front entrance, which all add to the attractive exterior of this home.



· · FIRST · FLOOR · ·

The entrance to the main hall of the home illustrated on the opposite page is through a vestibule on one side of which is located a closet for outer wraps. At the rear of the hall is a comfortable den. The space underneath the main stairs, though indicated as a closet, is sufficiently large so that it may be converted into a lavatory if so desired. French doors in pairs are used in the openings that lead from the living-room to the front porch, sun-parlor and hall, giving the desired light to this large and well-proportioned room. The sun-parlor is planned to be inclosed with combination sash and screens, making it livable in the winter as well as in the summer.



· · SECOND · FLOOR · ·

The dining-room, dining-alcove and kitchen are well-proportioned to the balance of the house and occupy the space at the right of the first floor. In the designing of the kitchen and rear entrance of this home you will note that all the desired features have been conveniently placed. On one side of the kitchen range the space is used for a broom closet and on the opposite, the flue in the chimney contains an incinerating chamber at the base for the disposal of all garbage, waste, etc. The platform in the rear entrance is sufficiently large for a refrigerator, which has been arranged so that it may be iced from the outside, thus saving the housewife any annoyance from this source.

On the second floor plan the main hall contains a window seat with a hinged cover and a linen closet located near the main bath. The balance of the floor plan consists of four good sized bed-rooms with roomy closets. The bed-room on the left being larger than the others and connected with a private bath has been planned for the master chamber.

The basement extends underneath the entire house and contains laundry with ample drying space, vegetable cellar, garbage incinerator connected with the kitchen, heating plant and fuel bins.

In constructing a home of this kind you want to be absolutely sure that you have the best of advice pertaining to exterior and interior decorating, landscape gardening, etc. Your membership entitles you to service along these lines in order that your home may be as convenient and attractive in design as the illustration indicates.

This home is 46′ wide and 32′ in depth and should be placed on a lot with a frontage of 75′ or 100′ in order to show to its best advantage.



Sanitary Elimination of Household Waste

PROTECTION against disease is no less essential than protection against the elements. The Garbage Can is not a protection, it is a cordial invitation with an R.S.V.P., and it is extended to every disease germ in the community. The reply of every germ and of every germ's neighbor and uncle and aunt is "Thanks, will attend your banquet. Make provision for all the relatives." And they all gather at the Garbage Can.

But they are a treacherous crowd. The recipients of your hospitality, they crowd in, each with his own peculiar weapon of death. They immediately set about on their murderous mission. The winged insects whose birth-place is the Garbage Can, furnish them with a convenient means of aerial transportation. From Garbage Can to some receptacle, a pail, a cup, a glass or a dish they wend their short passage, and a week or two weeks later they have accomplished their insidious mission. A fever, a headache, a doctor, an undertaker, and the first installment on the cost of the Garbage Can has been paid.

Strange it is, that with all our precautions as to sanitary plumbing, damp-proof basements, correct heating and ventilation, proper drainage, filtrations, and chemically treated water, we've actually devised so obvious a source of disease as the Garbage Can. One could hardly be charged with a wicked suspicion of the motives of his fellow man if he confided the suggestion that the meagre practice of some forlorn physician had been the inspiration of this homicidal institution. Whatever may have been the motive, it requires no skilled sanitarian to understand the high efficiency of the Garbage Can as a promoter of disease.

Moreover, as a work of art the Garbage Can is not exactly a success. As compared with the environment which a well-appointed home contributes, it suggests nothing but ugliness, untidiness, inconvenience, menace to health, filth, in short, it is a dangerous nuisance with nothing to commend it and everything to condemn it.

The point we make is, what *reason for being*, has a Garbage Can?

And it is now possible, with a small outlay to dispense with this incubator of disease. Science has devised a plan by which garbage can be destroyed without the formation of unpleasant odors or the hazard incident to the use of a Garbage Can. The garbage is burned with the use of no fuel other than the garbage itself. The equipment which is used for this strictly sanitary method of disposing of household garbage and waste is known as the Kernerator.

There are two tests by which one can measure the value of all equipment and decorative fixtures which one introduces into the home. Does it lighten the work of the home worker? Does it contribute to the cleanliness and healthy condition of the home? In designing our homes, we have given considerable thought to this convenience as we consider it almost as essential as sanitary installations of proper pipes to assure the home of perfect drainage.

Destruction by burning in municipal plants has reached an advanced stage of development, but with the exception of a number of stove or furnace arrangements, built to operate with gas or other fuel and designed to consume garbage only, there has never been any successful attempt made to solve the problem of the disposal of all household waste, including garbage, until the Kernerator was perfected.



The Kernerator combines the three recognized desirable features: First, it destroys refuse where it originates; Second, it destroys by burning; Third, there is no cost.

The Kernerator is built into an enlarged base of the kitchen chimney wherein is

placed an arrangement of grates designed with a by-pass, which permits the draft to pass over and around as well as through the material to be burned. No fuel is required as this system is founded upon the demonstrated fact that in a normal household there is more than enough combustible material in the form of waste paper, rags and the like, to dry out the moisture from any ordinary supply of garbage. Garbage itself is thoroughly combustible when dried and requires only sufficient heat to evaporate the moisture in order to render it combustible.

Little or no decomposition of kitchen waste will take place inside of the incinerator, even in the hottest weather, because the inside of the chimney contains soot, creosote and gases which are all preservatives and disinfectants and prevent decomposition for the relatively short periods between burnings. It is the same principle as used in the old-fashioned brick smoke house in which meats are smoked so as to keep them sweet for an indefinite length of time. The inside of your chimney is, by reason of frequent burnings, absolutely sterile and there is, therefore, no inducement to decay. Our experience, covering a number of years, is that Kernerators are, in fact, odorless.

A receiving hopper door is placed in the chimney flue in the kitchen and in the upper stories of the building if desired. Into this hopper is dropped all manner of household refuse from time to time as it develops—newspapers, wrapping paper, kitchen waste of all kinds, cardboard boxes, tin cans, bottles, rags, sweepings, etc. This may be continued for about a week or until the incinerating chamber is practically full of alternate combustible material, but with the combustible material far in excess of the damp or non-combustible. The tin cans, bottles, and other material of this character, hold the mass in a loose condition, permitting the draft, fire and heat to circulate through and around the moist material.

The incinerator is fired about once a week. The intense heat from the large amount of burning material quickly evaporates the moisture in the vegetable matter and this dried material in turn becomes fuel. The burning, however, is of relatively short duration and does not result in radiating any heat into the kitchen or upper floors. The fire being hot while it lasts, creates a strong draft into and up the flue so that no smoke or odor can come out through the hopper door into the kitchen or upper stories. The fire thoroughly sterilizes the entire flue, maintaining a perfectly sanitary condition from the bottom to the top. The soot on the walls of the chimney absolutely prevents kitchen waste from adhering to the inside walls of the flue, which is not in any way comparable to the so-called garbage chute.

The Kernerator has been in daily use for years and has been carefully tried out under every possible condition and it is now in successful operation in thousands of homes and apartment buildings throughout the United States.

Because of our thorough acquaintance with the incinerator's practical performance and our unlimited confidence in its efficiency, we do not hesitate to recommend its installation in all our designs. Since the waste supplies its own fuel, the cost of installation is the only cost. The installation in your chimney of a Kernerator interferes in no way with the use of the same flue for kitchen range or furnace.

The Kernerator is designed to meet the requirements of all sizes and type of homes, and the cost of installation (which is the only cost) is very small compared with convenience and sanitary condition it promotes about the home.



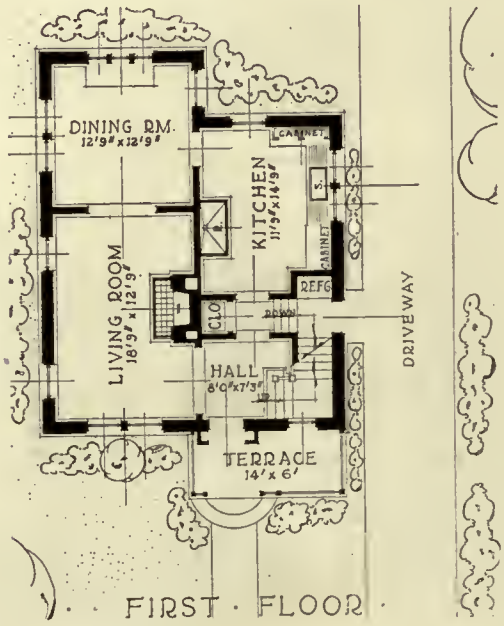




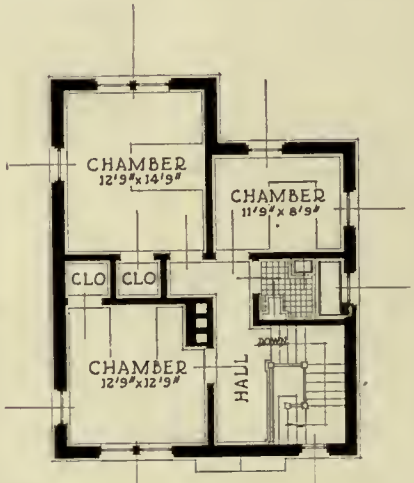
The Lourim

Simple in design, this home requires nothing more than the proper color and texture of face brick for its success. There is a suggestion of quaintness about it that appeals to all. The front entrance, iron railed stoop and circular steps are unique and very charming features. The lines of the roof are particularly pleasing.

The room arrangement is excellent. The large living room and dining room are connected by a pair of French doors. The hall is accessible to the kitchen through the passage way under the stairs, which also has a closet for wraps. On the second floor there is an ideal arrangement of three bed rooms with closets and bath. This home is suitable for a narrow city lot being 27′ in width and 34′ in depth. For anyone who desires a home built on good architectural lines The Lourim should have careful consideration.



FIRST · FLOOR



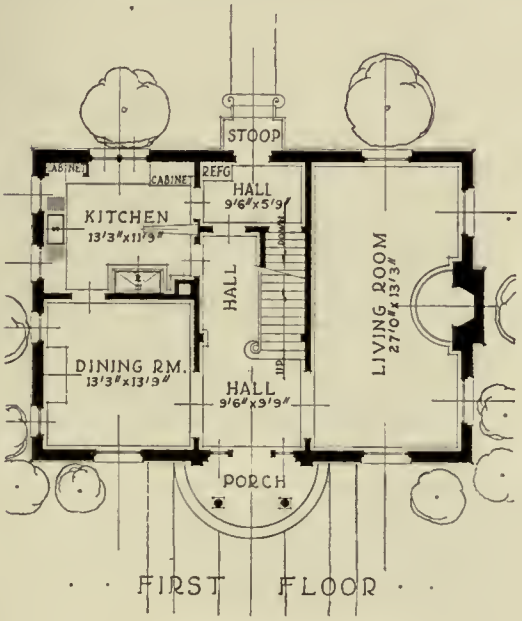
SECOND · FLOOR



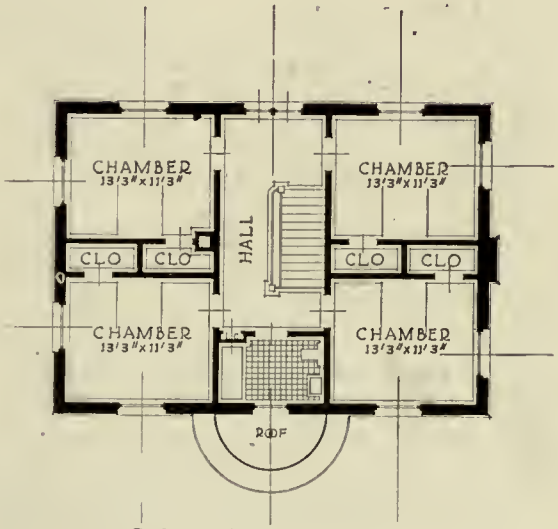
The Allenton

An attractive type of brick Colonial home that will adapt itself to almost any location. The front entrance with colonial side lights is protected by a carefully designed semi-circular hood, which with the pleasing detail of the brick work, adds to the attractiveness of the exterior.

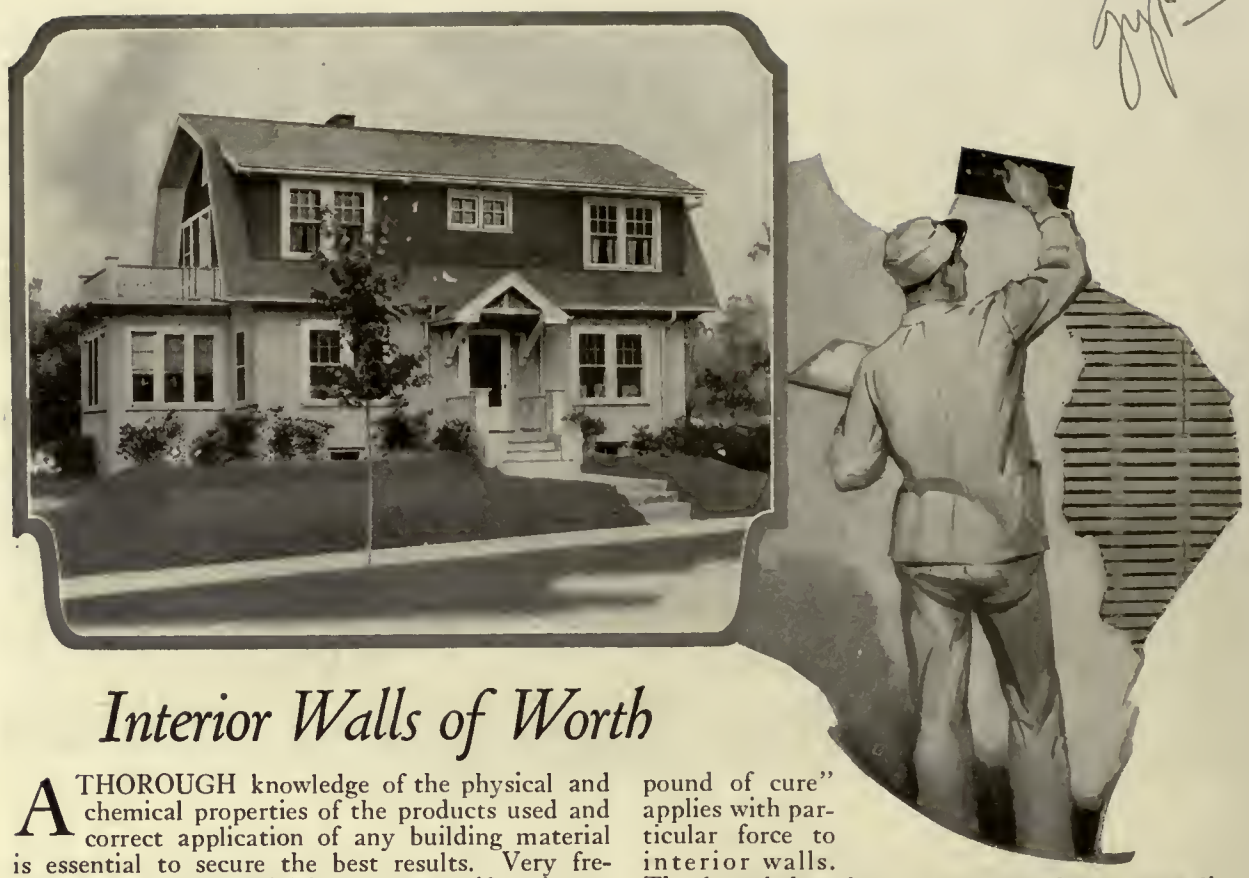
The hall of a Colonial home, owing to its important position, should always be made as attractive as possible. The open stairway and French doors leading to the living room and dining room are sure to create the desired impression in this design. An attractive fireplace can be found in the living room arrangement. The arrangement of equipment in the kitchen will appeal to every housewife and with the dining room completes the first floor of "The Allenton." The second floor plan contains four bed rooms, closets and large bath. The size of this home is 29′ wide and 38′ deep.



· · FIRST FLOOR · ·



· · SECOND · FLOOR · ·



Interior Walls of Worth

A THOROUGH knowledge of the physical and chemical properties of the products used and correct application of any building material is essential to secure the best results. Very frequently a good material is condemned if, owing to the lack of a proper knowledge of handling it, it has produced poor results.

The plastering, or covering of the interior walls is one of the most important features in homebuilding. The fact that the cost of this item in your construction program is low in material and labor constitutes no reason why it should not be given considerable thought. Because much of the beauty of your home as well as the comfort of its occupants depends upon this part of the work, it should be well done. A room has six exposed surfaces: floor, ceiling and four side walls which means that about 85 per cent of its surface is devoted to walls and ceiling. This feature should, therefore, be given considerable thought in order to eliminate the many unhappy and costly errors that are apt to creep into an otherwise satisfactory program.

Interior walls, in order to be satisfactory, must be smooth, free from cracks and must produce a surface which can be papered or covered with any of the many wall finishes, according to the builder's taste. Good materials will deaden the walls of the room so that sounds from other rooms cannot be heard easily and so that there is no vibration or disagreeable echo from the walls. Everyone appreciates talking in a room where the sound is softened and where noises from the other part of the house are not heard. A wall finish should be used which can be easily decorated and frequently cleaned and which will lend itself as a good background to other decorations and furnishings of the room.

The old rule, "An ounce of prevention is worth a pound of cure" applies with particular force to interior walls. The knowledge that most people have, regarding building material, leads them to believe that plaster is plaster. The home-builder is cautioned not to wait until trouble develops before informing himself on this very important part of a successfully constructed home.

The ideal materials for interior walls are lath and plaster and the ideal plaster is gypsum plaster. It is probable that nothing has been found that will produce a more satisfactory wall. Gypsum plaster is made by subjecting to heat (calcining) gypsum rock. The process dries up a large percentage of the water. When plaster is mixed with water on the job it takes up the water that was expelled during calcination, and returns to its original rock state. For this reason it will be seen that the crystallization, or setting, of gypsum is a law of nature. Gypsum plaster must set if conditions are right.

Gypsum wall plasters have practically supplanted lime for plastering purposes because lime requires several months to harden and years to attain its full strength. Unless lime is properly hydrated and applied it never develops the strength necessary for durability. During this period of hardening, lime plaster is giving off water in exchange for carbon gases absorbed from the air. Until it is entirely hardened the building is damp and unsanitary.

Conditions of this kind are impossible with gypsum wall plaster. It sets up uniformly hard and homogeneous within two or three hours after application. Inside of 36 hours the walls are dry and there is no further dampness or sweating as with lime mortars. The building is immediately habit-

able from a hygienic standpoint. These are the particular features, although there are a host of other advantages resulting from them, which makes gypsum plasters so different from, and so much better than, the old-fashioned lime and sand plasters.

Gypsum wall plaster adheres equally well to wood or metal lath, plaster board, tile, brick or other plastering surfaces. It sets in two or three hours, permitting the carpenters to follow the plasterers with little loss of time. Being made with pure gypsum, it is a valuable fire resistant and does not expand and work itself loose from the surface as lime plaster does when subjected to fire. Its density and extraordinary hardness increase the durability of the walls and their resistance leakage from water pipes or imperfect roofs. It will not crack of itself, shrink, or stain and will save considerable in the time necessary to plaster a building.

We can highly recommend plaster produced by the United States Gypsum Company who are pioneers in the manufacture of gypsum products in America. They are examined by experts from the selection of the raw materials to the shipment of the finished products. This company manufactures a number of different kinds of plaster and a little explanation of their physical and chemical properties will assist in making a selection.

Syanize Plaster THIS plaster is not a mixture, but is made of pure gypsum rock by a new process of treating gypsum. Instead of losing materially in sand carrying capacity each month while in storage and working "short" it retains its rich, easy spreading qualities, and continues to carry full measure of sand even when stored for a year. It is the easiest to apply of all plasters. It works cool and free from the trowel, and is not sticky. Plasterers say they can do better and speedier work with this material. It eliminates waste as there are very little plaster droppings behind the lath no matter what form of lath are used. This plaster is equally advantageous when troweled smooth, when floated, or when mixed with lime putty for a finish coat.

This plaster can be obtained in three forms: Syanize Gypsum Cement Plaster, Syanize Wood Plaster or Syanize Prepared Plaster.

Cement Plaster CEMENT plasters are "neat" materials supplied hair fibered or unfibered, sand to be added at the job. These materials are made for use where good sand is available at reasonable cost and where the purchaser prefers to sand his own mortar. These materials are rich, spread well under the trowel, and, when mixed properly with a good grade of sand, are uniformly satisfactory both in working qualities and in the finished wall.

Fibre Plaster THESE plasters require the addition of water only to fit them for use. The sand is replaced by finely shredded wood fibre, uniformly distributed. Wood fibre plasters avoid the handling of sand, the dangers of poor sand and oversanding, and the consequent bad results. Composed of pure gypsum and shredded wood fibre they are of greater bulk, lighter, and make a wall about one-half the weight of sanded mortar. Through the elimination of sand the wall is made practically of pure gypsum, wood fibre serving as a reinforcement, making walls of great toughness and strength. These walls can be sawed in two like wood and are especially adaptable to alterations. Wood fibre is superior to sanded plaster in fire resisting, insulating and sound deadening qualities. Its flexible nature renders it more capable of withstanding vibrations and other strains imposed upon the building. It is especially desirable for winter use.

Prepared Plaster THESE plasters need only the addition of water to fit them for application. The ingredients, cement, plaster, sand, etc., are machine mixed and automatically distributed with absolute uniformity.

With prepared plasters there can be no "guesswork" mortar, no streaks of sand or spots of unevenness in setting up, causing differences in the tensile strength of the wall. There is no danger of poor sand; nothing but sharp, clean silica sand, properly graded, screened and thoroughly dried being used, and the proportions are exact.

There are many objections to the old-fashioned lump lime plaster, for it requires skill in mixing and in the selection of the proper ingredients. Moreover there are times when it has to be left for many days before it is entirely free from "pitting" or "popping." The labor of doing this work makes it inconvenient and costly to use and the results obtained depend on the skill of the workman who mixes it. The advantages of using prepared plasters





are many, for they need only the addition of water to fit them for application.

Ivory Keene's Cement IVORY Keene's Cement is the hardest and densest gypsum material that is applied with a trowel. It is pure white in texture and takes a very high polish. It is manufactured from pure, specially selected gypsum. It is ground very fine and excels in smooth, uniform working qualities and in tensile strength. In the construction of small homes it is excellent for bath-rooms and kitchens as it may be marked off and its hard surface polished to resemble tile.

Wood Lath PROBABLY ninety per cent of the cracks in plaster are due to causes other than settlement. An overwhelming majority of such troubles are due to improper lathing. The causes of lath trouble are: First, inferior lath which expand and contract, unduly shearing the keys which crack the plastered surface or which contain pitch and stain the plaster; Second, neglect to wet the lath so that they will swell as much as possible before the plaster is applied; Third, failure to properly space the lath; Fourth, insufficient nailing.

Cracks or buckles in the plaster coat running horizontally to the lath are always traceable to lath conditions. When plaster sounds hollow and loose when tapped but is hard, either faulty spacing may be looked for except in cases of dry-outs or over-sanding plaster or it will be found that the keys have fallen off from lack of strength.

Straight, vertical cracks, map cracks, or larger cracks are often the result of failure to properly break joints in the lath. Settlement and shrinkage cracks are very liable to result when lath joints are not properly staggered. Lath stains on the surface of the plaster are due to pitch, sap, rosin, oil, tar, or gum in the lath.

It is always better to specify No. 1 lath and also the kind of wood desired, White Pine, Cypress, or Spruce are preferable when they are to be had. Lath should be free from knots, sap and bark. However, this is not the test of good lath because many clear laths on the market today are of very inferior quality.

Wetting all lath before plastering is important in the prevention of plaster cracks due to swelling, warping, twisting and buckling of wood lath. Wood lath should be wet the day before plastering and again an hour or so before plaster is actually applied for swelling lath exerts tremendous pressure which shears off the keys and causes the plaster to loosen and crack. This condition can be avoided only by using a good grade of lath and by wetting the lath to the limit before plastering so that they will not swell after the plaster is spread.

Lath should be spaced ¼ or ⅜ inches apart and should be so spaced at ends as well as at sides. Narrower spacing will not provide sufficient room for the lath to swell and will result in weakened keys. Wider spacing, on the other hand, is unnecessary and is a waste of materials. Lath should be applied in groups of five or seven lath which should be staggered; that is, the ends of each group moved to the stud at the right or left of the group above. Proper nailing requires two lath nails at the end of lath and one at intermediate studs and nails should be driven home so as to hold the lath tightly against the studs.

Metal Lath THE use of metal lath in connection with interior walls is finding much favor in the present modern home. Although this base for plaster is a little more expensive than wood lath,



it is well worth the expense as it means additional insurance against poor walls. If you are limited as to the expenditure in this part of your program, a good alternative is the use of metal lath on all ceilings and in the corners formed by the side walls and ceiling of the room. This will help to eliminate cracks in the plaster where they most frequently occur.

One cause of weak walls where metal lath is used is the use of a lath with too open a mesh. The stiffness of metal lath is determined by the weight. The minimum weight per square foot should be specified. To be used with wood studding the weight should be 2½ pounds per square foot; for ceiling with wood joists 2¾ pounds. The use of too open a mesh, in addition to the resulting waste of plaster causes sagging as also does the failure to properly stretch and staple the lath. Failure to properly tie the lath between the stud or to lap the bottom sheet over the one above, instead of vice-versa—is a frequent cause of cracks in horizontal joints. If cracks appear in metal lath ceilings it may be due to the fact that extra-fibered plastering has not been used. Stresses due to defects in the design or general construction of the building are causes of cracks in metal lath walls.

Sheetrock SHEETROCK is a fire-proof wall board. It won't burn, warp, buckle or sag. It resists heat and cold; it is a good sound-proofing medium, its use results in a strong, permanent wall.

Sheetrock is made from pure gypsum. It is moulded while in a plastic condition, between two sheets of tough protective covering. When the board is finished the gypsum returns to its rock state, strong and lasting, tough and durable, and slightly flexible. It comes in a thickenss of ⅜ inch, in length of 6, 7, 8, 9 and 10 feet, and in width of 32 inches and 48 inches, so that it fits studs and joists set on regulation 16 inch centers and is readily adaptable to any ceiling height.



All edges of Sheetrock are reinforced and protected by the same material with which the board is covered. Thus the edges are square and clean-cut as shown by the accompanying illustration. Because Sheetrock possesses so many high-grade, practical qualities, it has a correspondingly wide field of usefulness. Following is a partial list of Sheetrock uses: for walls and ceilings in new buildings of all types, for building new rooms in old buildings; for lining garages and attics; for enclosing furnace and storerooms; for fireproofing over heating plants.

In making alterations and lining additions which are often added after homes have been completed the use of Sheetrock eliminates the dreaded mess always caused by plastering. It is sure to be tracked into other parts of the home and causes no end of extra work.

Garage comfort is appreciated by all who own automobiles, for it not only adds to the life of a car but eliminates to a large extent the inconvenience of frozen radiators, oil lines and often the possibility of not being able to start your car at all on cold mornings.

Attic space partitioned and covered with Sheetrock adds a play room for the kiddies for cold and rainy days.

To apply Sheetrock, space the joists and studs 16 inches on centers. Place headers so that all sides and ends of boards will be nailed. In sawing the board to fit around openings, etc., place it trade-mark side down, and use common hand saw; support the board close to sawing edge.

Use 3-penny, countersunk or fine flathead nails, preferably coated or galvanized, driven straight in, heads flush with surface. Space nails on intermediate support 6 inches apart on ceilings, 9 inches apart on wall. On all sides and ends, space nails 3 inches apart and ⅜ inch from edge.

Butt all Sheetrock edges tightly together. First nail side at joining; then nail to first intermediate stud or joist; then to second intermediate stud or joist; then nail side away from joining; then nail ends. Erect ceilings first. Tack a strip of wood along the top of stud, ½ inch from ceilings to hold edge of board. If cross joints are necessary see that they are broken.

On the walls apply Sheetrock full length up and down. Boards must fit tightly against ceiling boards as well as against adjoining boards. Fill spaces above and below windows last, using cut pieces.

A dry putty called Sheetrock Finisher, is manufactured to be used in filling joints, spotting nails and repairing surface abrasions caused by handling.

Sheetrock fills a long-felt need for a factory-cast wall material. It takes all finishes and wall decorations. The flat surface effect is obtained by filling all joints and nail heads with Sheetrock Finisher and it then may be handled and covered with flat wall paint or enamel, kalsomine or wall paper. Another very satisfactory method is to cover the Sheetrock with linen or canvas which, in turn can be so finished as to obtain the particular decorated effect desired.

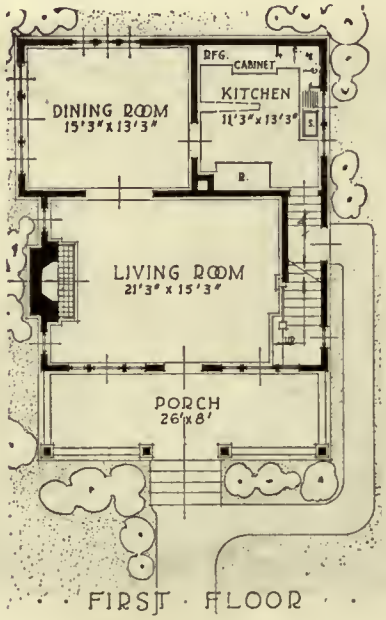




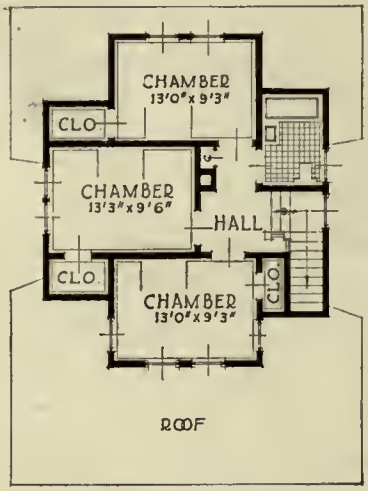
The St. Claire

In this delightful story and a half Bungalow the artistic possibilities of a small home are shown. Interior arrangement and exterior attractiveness make this a thoroughly livable and pleasing design. The exterior wall covering is shown of wood shingles, but can be altered to a combination of siding and shingles or all siding without detracting from its appearance. The main part of the house is 26′ wide by 30′ deep with a 2′ projection forming a bay window in the dining-room.

The living-room with open stairway at one end and fireplace at the other, has wall space and proportion for attractive furnishing. A good size dining-room connecting the living-room with French doors and well planned kitchen complete the first floor. The second floor contains three large bed-rooms, closets and bath conveniently arranged with entrance to the upper hall.



· · FIRST · FLOOR · ·



· SECOND · FLOOR · ·



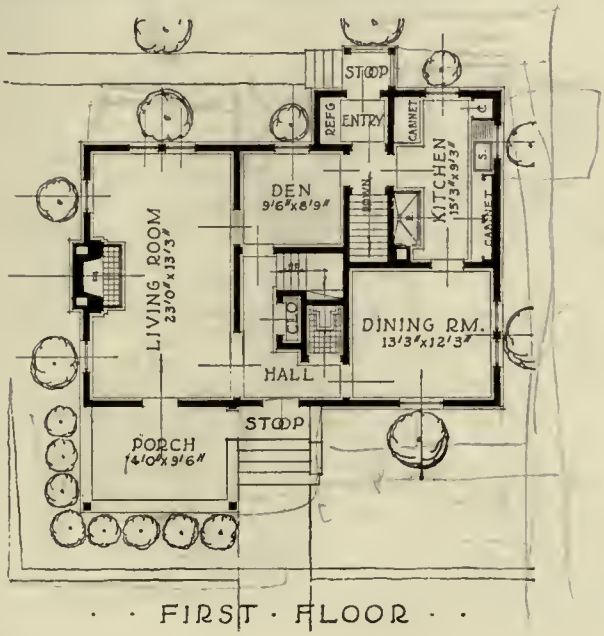
The Gilberton

A LOVELY, Dutch Colonial home with exterior walls of wide siding. The comfortable screened porch on the front with entrance from the living room and stoop can be increased in size and placed at the side if the shape of your lot requires this change.

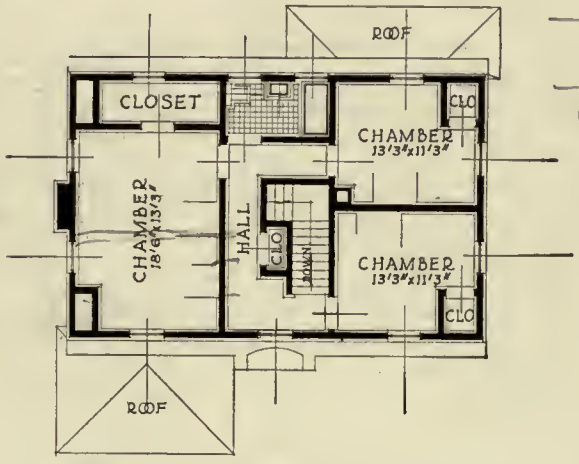
The floor plans are designed to utilize every foot of space to best advantage. The entrance hall which contains closed stairs leading to the second floor, also has a convenient place for outer wraps and lavatory. The living room is large and well proportioned and contains good wall space and attractive fireplace. The arrangement of the rear entry which contains refrigerator, cellar stairs and entrance to the kitchen will be appreciated by the housewife.

The bed room at the left of the hall is designed for twin beds and contains a good sized closet. Two smaller bed rooms with closets and bath complete the second floor. Size: 34′ by 24′.

34
24
136
68
816



· · FIRST · FLOOR · ·



· · SECOND FLOOR · ·



The Rockford

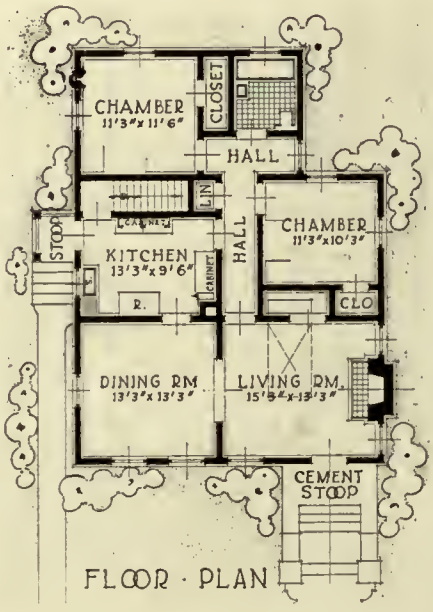
THIS five-room home was designed with thought as to economy, both for materials and space, without sacrificing the exterior appearance or interior arrangement. The two false gables on the front of the roof add considerable to the appearance of this home. The smaller gable has sufficient projection to form a shelter over the front entrance. The overall dimensions of this plan are 30′ wide and 40′ long. The exterior wall covering is of bevel siding with the exception of the two gables on the front slope of the roof where shingles are used.

In design, this home is really classed as a two bed room plan, but has three bed room efficiency by installing a Murphy Door Bed in the closet off the living room. This valuable space saving equipment requires a surprisingly small amount of room and when not in use is concealed in such a way that it never mars the decorative features of the room.

The living room and dining room are located on the front of this plan and are connected with a pair of French doors. The windows in the living room and front wall of dining room are of casement type designed to swing in. The kitchen is of good size and has a convenient arrangement of all equipment. Stairs lead from this room to the basement, which may be excavated under the entire house or even part of it will admit the proper placing of heating plant, fuel room, fruit room and laundry.

The hall which opens from the living room and kitchen leads to the bed rooms and bath and gives this part of the plan the necessary privacy. The space in back of the cellar stairs is planned for linen closet, giving handy storage for extra bedding, towels, etc. The bed rooms have good sized closets and are located with two outside walls, permitting cross ventilation, which is a very desirable feature. The bath room is above the average for a home of this size, and will allow the fixtures to be placed in a number of different positions, according to the style and type selected. A medicine chest with mirror door is designed to be placed above the lavatory.

If this design is your choice the Interior Decorating and Landscape Departments of your Society, each conducted by experts, will assist you in planning this part of your project so that when your home is completed and ready to be occupied it will be admired by all who see it and you will be a happy satisfied home builder.



FLOOR · PLAN



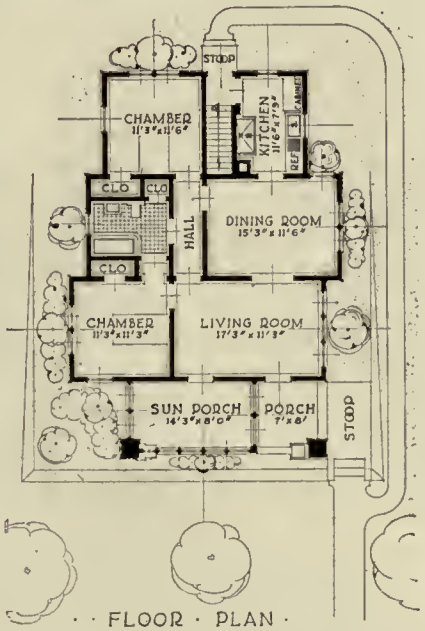
The Redlands

"We would never have had our beautiful new bungalow if your book and service had not made it all so easy. Could sell for almost twice what it cost us."

The above letter from the builder of "The Redlands" certainly spells satisfaction. Anyone who is considering the construction of a bungalow should give this design serious thought. This plan is 32′ wide and 36′ deep, which does not include the 14′ 3″ x 8′ sun parlor at the front. With exterior wall covering of wood shingles, wide eave and gable projections, supported by brackets, low-pitched roof and attractive arrangement of windows, it surely expresses a true bungalow spirit.

This may appear like a difficult design to construct owing to the many breaks in the roof, but the work of framing the roof is simplified owing to the fact that each set of plans furnished by your Society shows the exact size, length and spacings of all the frame material which will assure you the same attractive home as pictured above. The bills of material furnished are actual piece tallys taken from the framing details insuring accurate estimates on material and labor.

The front gable covers the sun parlor and inset porch, which gives the necessary protection to the front entrance. The living room is large and contains an attractive window arrangement at the side. The opening between the living room and the dining room has been planned for a pair of French doors but can be increased in width to admit a cased or pedestaled arch if so desired. The kitchen, though small, contains all the necessary conveniences and opens onto an entry which serves as an outside and inside passage to the cellar. The hall, which can be entered from the living room or dining room, gives privacy to the rear bed room and bath. The front bed room opens off the living room and also has direct connection with the bath. A Murphy door bed can be placed in the closet off this room so it can be used as a den during the day.



· · FLOOR · PLAN ·

The basement is planned to be excavated under the entire house and contains heating plant, fuel bins, fruit room and laundry. An incinerating chamber is designed in the base of the kitchen flue, with hopper doors conveniently placed to receive all garbage and waste. This is not only a convenience at a small cost but also saves many unpleasant trips to an outside garbage can.

This home can be comfortably placed on a lot with a 50 foot frontage.



The Washington

SUITABLE for a narrow lot. This Colonial home has an air of refinement and dignity. The exterior is made by the proper use of wide siding, window shutters and flower boxes. Considerable thought was given to designing the unique entrance.

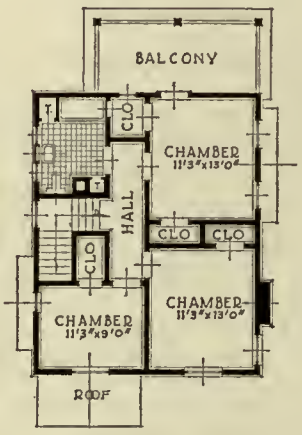
The size of the main part of the house is 24′ wide x 30′ long, with an 18′ x 8′ addition, adding a sun-room and dining-alcove.

The living-room extends across the entire front of the house, and the splendid window arrangement in this room, as well as the rest of the house, insures a sunny atmosphere. Dining-room, sun-room, kitchen and dining-alcove are conveniently arranged. French doors are used in the openings between the living-room, dining-room and sun-room.

The second floor has three good sleeping rooms, large bath and roomy closets. Note the rear bed-room, which has a door opening on to the flat roof of the addition, convenient for airing bedding, etc., a feature which will be appreciated by every housewife.



· · FIRST · FLOOR · ·



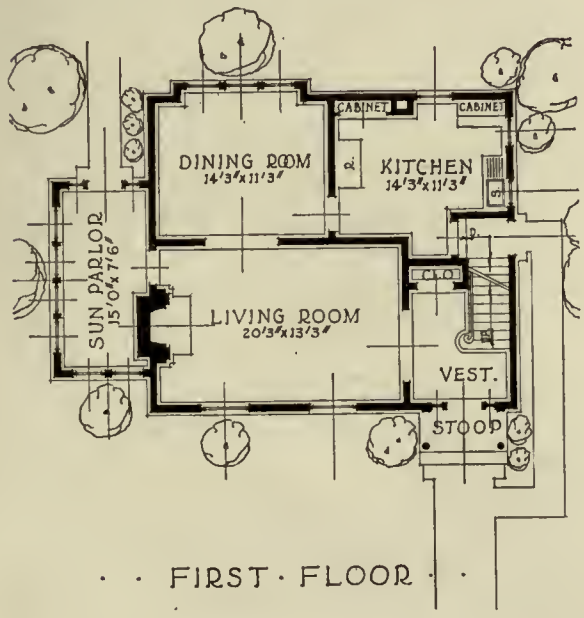
· · SECOND · FLOOR · ·



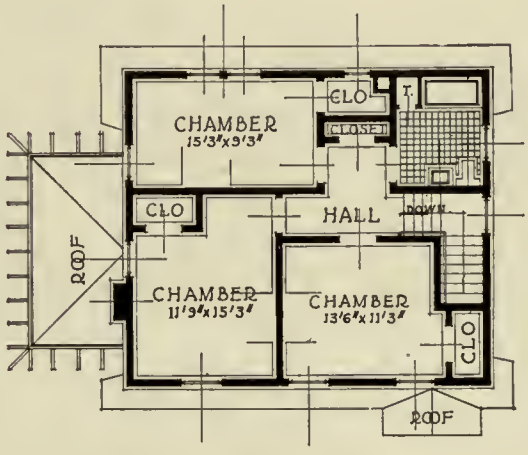
The Syracuse

"The first sure symptoms of a mind in health, is rest of heart, and pleasure felt at home." Did you ever consider the vast difference in the meaning of the words house and home? A house is a structure to live in; a home is the dearest place on earth. It is a part of yourself and expresses your taste and character. There is a fascination and distinct charm about this type of Dutch Colonial which clearly expresses the difference between house and home.

The plan of this home shows an exceedingly compact and convenient arrangement of floor space. The stairway is located in the small entrance hall, which is separated from the living-room by a pair of French doors. From the living-room, French doors lead to the dining-room and sun-room. The entrance to the kitchen and basement is furnished by a grade stair at the side. The second floor comprises three bed-rooms with closets and bath around a central hall. The size of this design is 30′0″ wide by 26′0″ deep.



· · FIRST · FLOOR · ·



· · SECOND · FLOOR · ·

A GUIDE TO GOOD STUCCO

A valuable exterior wall covering when properly handled

STUCCO is a mixture of Portland Cement, sand, lime and water worked into a plastic mass and applied to a foundation of metal lath, hollow tile, cement blocks or brick.

There was a time when we thought all walls, foundations and chimneys must be constructed of brick or stone, but experience has taught us that very proper effects can be brought out by the use of stucco whether the spirit of the home happens to be Spanish, French, English or any other of the many types commonly used.



To make the stucco exterior home of real attractiveness and to make it durable, one cannot afford to use inferior materials. The logic of this is so plain as to need no comment. Then with good materials in the hands of careless workmen there is apt to be an unsatisfactory job, and the house will be to the owner what it is to the beholder, a miserable mixture.

Today, we see many homes of stucco exterior. It might be added that some of these and a goodly percentage are lacking in the very essentials for which we are always striving, the attractive exterior. This is due to several things. In the first place, the style of the house might be such as to make the exterior inharmonious. The general outline might be out of proportion and the setting lacking in important respects. The exterior might be devoid of proper color effect and the materials, sometimes of poor quality and not properly applied, give the structure a hideous appearance.

It might be added that by the use of the best stucco, the effects possible are many and beautiful and that nothing will so mar the value and outward appearance of a home as the use of an inferior quality of stucco. Instances of this are common. Large cracks and loose sections appear and sometimes fall off. Many times these defects are laid to the settling of the foundation or the base by the man who has applied the stucco. He thus seeks to hide his own mistake in using inferior materials or to excuse his indifference in workmanship. The use of inferior grades of materials and the improper application of good materials have done much to discourage the use of stucco, but if proper consideration is given to the selection of materials to be used and to the manner in which they are applied, there is no reason why the homebuilder will not have an attractive and satisfactory wall.

There are many forms of so-called patent stuccos on the market today but we recommend Portland Cement Stucco. This is a mortar consisting of Portland Cement, sand, lime and other aggregates. The Atlas Portland Cement Company now manufactures a white, non-stained cement which has the strength and physical characteristics of Portland Cement and which, owing to its unlimited possibilities is very popular for stucco work in cases where a white color is desired. It also can be used for interior decorative work and as a preparation for mortar used in setting tile and brick and for wainscoting in bathrooms, kitchens, etc. In stucco work, this White Portland Cement is used for the finished coat only.

Materials CEMENT. The cement should meet with the requirements of the standard specifications for Portland Cement of the American Society for Testing Materials, and adopted by this Institute.

FINE AGGREGATE. Fine aggregate should consist of sand, or screenings from crushed stone or crushed pebbles, graded from fine to coarse, passing, when dry, a No. 8 screen. Fine aggregate should preferably be of silicious materials, clean, coarse, and free from loam, vegetable, or other deleterious matter.

HYDRATED LIME. Hydrated lime should meet the requirements of the standard specifications for hydrated lime of the American Society for Testing Materials.

HAIR OR FIBRE. There should be used only first quality long hair, free from foreign matter, or a long fiber well combed out.

COLORING MATTER. Only mineral colors should be used which are not affected by lime, Portland Cement, or other ingredients of the mortar, or the weather.

WATER. Water should be clean, free from oil, acid, strong alkali or vegetable matter.

Frame Walls IN preparing frame work for stucco walls, the stubs should be placed on 16-inch centers and the corners of each wall should be braced diagonally with 1x6 inch boards let into the studs on their inner side, and securely nailed to them. The sheathing should not be less than 6 inches nor more than 8 inches wide dressed on one or both sides to a uniform thickness of 7/8-inch. The boards should be laid across the wall studs and fastened with not less than two 8d nails at each bearing.

Over the sheathing there should be laid a substantial building paper or felt, which is water-proof. It should be laid in horizontal layers beginning at the bottom.

Lath It is not especially advisable to use wood lath which, on account of the fact that it readily absorbs moisture from the stucco mortar, is liable to swell. When the wood shrinks in drying out, it very often pulls the stucco with it and causes cracking. The only wood lath that should be used are those which are properly creosoted, in order to prevent the absorption of moisture.

We recommend the use of metal lath which has been galvanized or heavily painted after expansion, weight not less than ¾ pounds per square yard. Metal lath should be placed horizontally, driving the galvanized staples 1¼ inch x14-gauge not more than 8 inches apart. Vertical laps should occur at supports and should be fastened with staples not more than 4 inches apart. Horizontal joints should be locked or butted and tightly tacked with 18-gauge galvanized wire.

The sheets of metal lath should be folded around the corners at a distance of at least 3 inches and stapled down as applied. The use of corner beads is not recommended.

Preparation of Mortar Mixing. The importance of proper and thorough mixing of the ingredients of the mortar cannot be too strongly emphasized. Machine mixing is in all cases to be recommended in preference to hand mixing. The use of hair or fiber is considered optional, and when used, the method of incorporation should be such as to insure good distribution and freedom from clots.

The ingredients of the mortar should be mixed until thoroughly distributed, and the mass is uniform in color and homogeneous. The quantity of water necessary for the desired consistency should be determined by trial, and thereafter measured in proper proportion.

Machine Mixing. The mortar should preferably be mixed in a suitable mortar mixing machine of the rotating drum type. The period of machine mixing should be not less than 5 minutes after all the ingredients are introduced into the mixer.

Hand Mixing. The mixing should be done in a water-tight mortar box, and the ingredients should be mixed dry until the mass is uniform in color and homogeneous. The proper amount of water should then be added and the mixing continued until the consistency is uniform.

Measuring Proportions. Methods of measurement of the proportions of water should be used which will secure separate uniform measurements at all times. All proportions stated should be by volume. A bag of cement (94 lbs. net) may be assumed to contain 1 cubic foot; 40 lbs. may be assumed as the weight of 1 cubic foot of hydrated lime. Hydrated lime should be measured dry, and should not be measured nor added to the mortar in the form of putty.

Retempering. Mortar which has begun to stiffen or take on its initial set, should not be used.

Consistency. Only sufficient water should be used to produce a good, workable consistency. The less water the better the quality of the mortar, within working limits.

Mortar Coats The question as to number and thickness of coats may be best answered by assuming that each coat of stucco has its own particular function. The scratch coat is the first applied, and its purpose is to form an intimate bond and a secure support for the body of the stucco. On metal lath it also serves as a protective coat, and it should therefore be strong and not too lean. The use of hair or fiber is of questionable value. Hair or fiber should not be used when the space back of the lath is to be filled, and is probably not a necessary ingredient in any case. The thickness of the scratch coat should average about ¼-inch over the face of the lath.

The function of the second coat (commonly called the brown or straightening coat) is to establish a true and even surface upon which to apply the finish. It forms the body of the stucco, and must fill the hollows and cover the humps of the scratch coat. For this reason an average thickness of ⅜-inch to ½-inch will usually be required. The brown and finish coats, or the scratch and brown coats, are sometimes combined in two-coat work, which is permissible when the base upon which the stucco is applied is fairly true and even, or when, on account of cost consideration, the best obtainable finish is not required. It is difficult, however, to obtain a satisfactory finish on a coat which runs ½ inch or more in thickness, since the tendency of a heavy coat to bag and slip is likely to produce an uneven surface.

The finish coat serves only a decorative purpose and has no structural value. Its function is solely to provide an attractive appearance, and any mixture or any method of application that may detract from the appearance, or in any way injure its permanency, should be avoided. Herein lies the argument for lean mixtures, which are more likely to be free from unsightly defects than rich mixtures, and are also more likely to improve in appearance under the action of the weather. The finish coat should be as thin as is possibly consistent with covering capacity, and may vary from ⅛ inch to ⅜ inch in thickness, depending upon the type employed.

It is obvious from the foregoing that first-class stucco should be three-coat work, each coat serving its own particular purpose. The bond between the brown coat and the scratch coat needs to be strong in order to carry the weight of the body of the stucco, and for this reason it is now considered preferable to apply the brown coat the day following the application of the scratch coat. Except in dry or windy weather, little wetting of the scratch coat should be necessary when the brown coat is to follow within 24 hours. A slight degree of absorption or "suction" in the scratch coat is probably better than complete saturation, for the brown coat, as well as the others, is necessarily mixed with a larger quantity of water than it requires for maximum strength. The removal of a portion of this excess water by the suction of the undercoat not only improves the quality of the coat, but also insures a better bond by tending to draw the fine particles of the cement into the pores and interstices of the undercoat.

Whereas the interval between the brown coat and

scratch coat, as recommended before, is relatively short, the interval before applying the finish coat should be as long as permissible under the conditions of the work. The reason for thus delaying the application of the finish is to enable the body of the stucco to obtain its initial shrinkage and a nearer approach to its final condition of strength and hardness, before being covered with the surface coat. The bond of the latter needs to be intimate rather than of maximum strength, and if the body of the stucco has been allowed to thoroughly set and harden, it may be assumed that there is less liability of volume changes in the undercoats to disturb the finish coat. A week or more should elapse between the application of the brown and finish coats.

The finish coat should be applied over a damp but not saturated undercoat, for excess water is likely to injure the bond seriously. Certain types of finish such as the wet mixtures used for sand spraying, or for the "Spatter dash" finish, may preferably be applied to a fairly dry undercoat, since suction must be depended upon to prevent streakiness and muddy appearance. The fact that finishes of this type applied in this manner may set and dry out with little strength is not serious; they gradually attain sufficient hardness with exposure to the weather.

Curing of the undercoats by sprinkling and protection of finish coats against the sun, wind, rain and frost, by means of tarpaulins are always to be recommended. This is not always feasible, however, and the architect should be content to specify and insist upon reasonable precautions. The application of cement stucco in freezing weather should be avoided, and, in fact, temperature slightly above the freezing point may allow frost to form on a damp wall. The application of stucco under such conditions is likely to result in failure.

Concise directions for the application of mortar coats follow.

Mortar. All coats should contain not less than three cubic feet of fine aggregate to one sack of Portland Cement. If hydrated lime is used it should not be in excess of one-fifth the volume of cement. Hair or fiber should be used in the scratch coat only on wood lath, on metal or wire lath that is to be back-plastered, or on metal or wire lath which is applied over sheathing and is separated therefrom by furring deeper than $\frac{3}{8}$-inch.

Application. The plastering should be carried on continually in one general direction without allowing the plaster to dry at the edge. If it is impossible to work the full width of the wall at one time, the joining should be at some natural division of the surface, such as a window or door.

The first coat should thoroughly cover the base on which it is applied and be well troweled to insure the best obtainable bond. Before the coat has set it should be heavily cross-scratched with a sawtoothed metal paddle or other suitable device to provide a strong mechanical key.

The second coat should be applied whenever possible on the day following the application of the scratch coat.

The first coat should be dampened if necessary, but not saturated, before the second coat is applied. The second coat should be brought to a true and even surface by screeding at intervals not exceeding five feet, and by constant use of the straightening rod. When the second coat has stiffened sufficiently, it should be dry floated with a wood float and lightly and evenly cross-scratched to form a good mechanical bond for the finish coat. The day following the application of the second coat, and for not less than three days thereafter, the coat should be sprayed or wetted at frequent intervals and kept from drying out.

In back-plastered construction the backing coat should preferably be applied directly following the completion of the brown coat. The keys of the scratch coat should first be thoroughly dampened, and the backing coat then well troweled on to insure filling the spaces between the keys and thoroughly covering the back of the lath. The backing coat should provide a total thickness of plaster back of the lath of $\frac{5}{8}$-inch or $\frac{3}{4}$-inch, and should finish about $\frac{1}{4}$-inch back of the face of the studs.

The finish coat should be applied not less than a week after the application of the second coat. Methods of application are described in the first section.

Two-Coat Work. Whenever two-coat work is required, the first coat should be "doubled," that is, as soon as the first coat is stiff enough it should be followed by a second application of mortar, and this should then be treated as described for the second coat. The finish should be applied not less than a week after the application of the first coat.

Drying Out. The finish coat should not be permitted to dry out rapidly, and adequate precaution should be taken, either by sprinkling frequently after the mortar is set hard enough to permit it, or by hanging wet burlap or similar material over the surface.

Freezing. Stucco should not be applied when the temperature is below 32 degress F., nor under any conditions such that ice or frost may form on the surface of the wall.

Stucco Finishes

Stippled. The finishing coat should be troweled smooth with a metal trowel with as little rubbing as possible, and then should be lightly patted with a brush of broom straw to give an even, stippled surface.

Sand Floated. The finishing coat, after being brought to a smooth, even surface, should be rubbed with a circular motion of a wood float with the addition of a little sand to slightly roughen the surface. This floating should be done when the mortar has partly hardened.

Sand Sprayed. After the finishing coat has been brought to an even surface, it should be sprayed by means of a wide, long fiber brush—a whiskbroom does very well—dipped into a creamy mixture of equal parts of cement and sand, mixed fresh at least every 30 minutes, and kept well stirred. This coating should be thrown forcibly against the surface to be finished. This treatment should be applied while the finishing coat is still moist and before it has attained its early hardening, that is, within 3 to 5 hours.

Rough-Cast or Spatter Dash. After the finishing coat has been brought to a smooth, even surface with a wooden float and before finally hardened, it should be uniformly coated with a mixture of one sack cement to 3 cubic feet of fine aggregate thrown

forcibly against it to produce a rough surface of uniform texture when viewed from a distance of 20 feet. Special care should be taken to prevent the rapid drying out of this finish by thorough wetting down at intervals after stucco has hardened sufficiently to prevent injury.

Pebble Dash. After the finishing coat has been brought to a smooth even surface, and before it has begun to harden, clean round pebbles, or other material as selected, not smaller than ¼ inch or larger than ¾ inch and previously wetted, should be thrown forcibly against the wall so as to embed themselves in the fresh mortar. They should be distributed uniformly over the mortar with a clean wood float, but no rubbing of the surface should be done after the pebbles are embedded.

Exposed Aggregate. The finishing coat should be composed of an approved, selected coarse sand, crushed marble or granite or other special material, in the proportion given for finishing coats, and within 24 hours after being applied and troweled to an even surface, should be scrubbed with a stiff brush and water.

In case the stucco is too hard, a solution of one part hydrochloric acid in four parts of water by volume can be used in place of water. After the aggregate particles have been uniformly exposed by scrubbing, particular care should be taken to remove all traces of the acid by thorough spraying with water from a hose.

In general, the rougher the texture of a stucco the more attractive the appearance. A very smooth stucco is apt to give the effect of a coat of paint at a short distance. A rough texture stucco, with consequent lights and shadows give a wall surface of life and interest. Particularly is this true if, ordinarily, the house is to be viewed from a distance. In other words, the roughness of texture should be dependent upon the distance from which the stucco is usually seen. For a house on a city street a fine texture is preferable; for one set back from the road, a rougher texture.

Coloring Stucco

Stucco can be colored in two ways; by the use of mineral pigments or colored sands. The latter method is preferable. And for colored stucco, and by this is meant also the lighter shades and tints, Atlas-White Portland Cement makes possible true color values. The ordinary grey cement absorbs and obscures the tone. The pure white cement gives them their true beauty.

The preferable method of coloring stucco is by using white cement and colored sand or stone chips. These give most delicate and interesting color effects. and yet at the same time give a color which is absolutely permanent. This method also has the value of giving a texture which, in itself, sets off more perfectly the combination of materials.

Coloring materials, in the form of mineral pigments are, however, often used. They are more satisfactory in the reds, yellows and blacks. Greens and blues are difficult to obtain and are rarely permanent. The coloring matter should be a natural mineral pigment of about the same specific gravity as the cement in order that it will be uniformly distributed throughout the mortar and not have a tendency to float to the top in mixing. Coloring pigments, if used in too large quantities have a weakening effect on the mortar and care should be taken to limit the amount used. Such pigments should be of the highest grade and purchased through a reliable dealer.



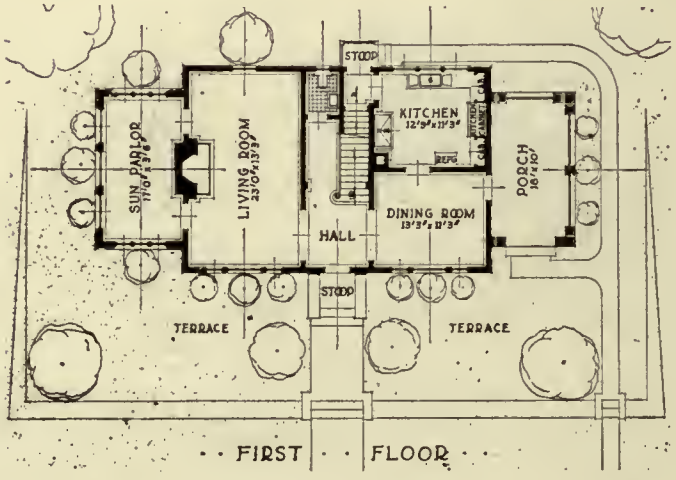


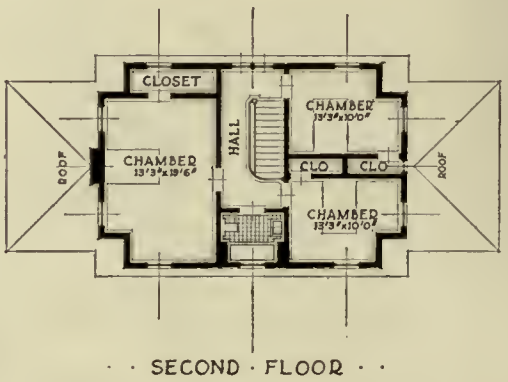
The Saginaw

Designed in accordance with the modern adaptation of the Dutch Colonial gambrel roof type, The Saginaw, with stucco exterior wall covering, has sufficient wood trim to break up any suggestion of plainness. The sloping lines of the roof have a tendency of drawing it to the ground. By terracing the lawn up to the water table and constructing the cellar windows in area wall, it sets with perfect balance.

When the day's work is done there is nothing about the home that has a greater appeal than a large comfortable living-room. The floor plan of this home is ideal, containing living-room, dining-room, kitchen and hall downstairs. In the rear of the hall is a lavatory and at the left of the plan is a comfortable sun-parlor, connecting with the living-room by French doors. One of these French doors can be omitted should you desire more wall space.

The second floor plan is arranged with a large master's bed-room and closet on one side of the hall and two smaller bed-rooms with closets on the opposite side. The bath-room contains all the necessary features, and is conveniently arranged. The dimensions of this plan, including the porch and sun-parlor, are 56′ wide and 24′ deep. It will show up to the best advantage on a corner lot.







The Cleveland

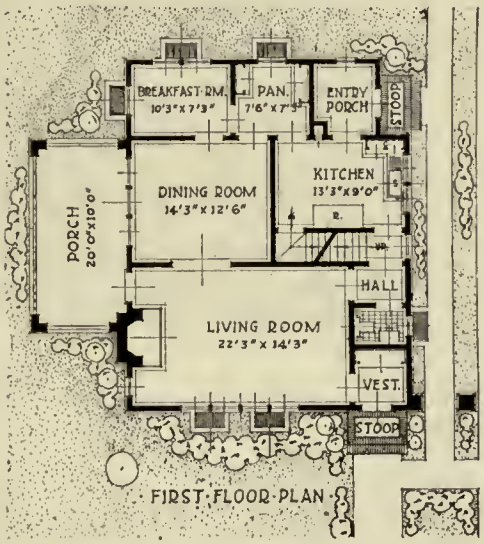
THIS Americanized English type with white Portland cement stucco walls, heavy timbered eave construction and paneled porch treatment, presents a sturdy, solid architecture typical of English homes. The unique hood over the front door, the gate at the side and paneled window shutters are all in keeping with this design.

It is hard to conceive the remarkable amount of room and many conveniences in such a small home. The rooms are all large, properly proportioned and well lighted.

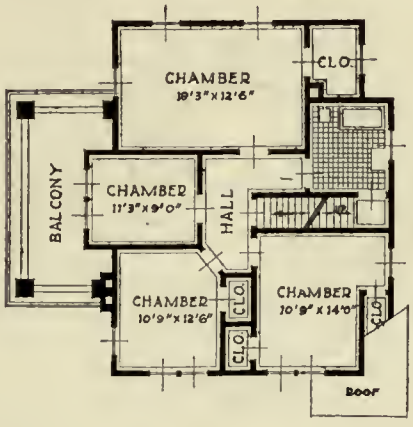
The outside dimensions of this home are 29′0″ wide by 36′0″ long with a 20′0″ by 10′0″ porch on the side. A French door opens from the living-room on to the porch.

The lower floor contains living-room, dining-room, butler's pantry, breakfast-room, kitchen, rear entry, vestibule and toilet. The arrangement of the cellar, attic and main stairs one above the other is a space saver. A door at the top of the main stairs gives the necessary privacy to the sleeping rooms.

Four bed-rooms, four closets and a large bath are conveniently located on the second floor. This design offers wonderful possibilities and will make a happy, proud owner.



· FIRST · FLOOR · PLAN ·



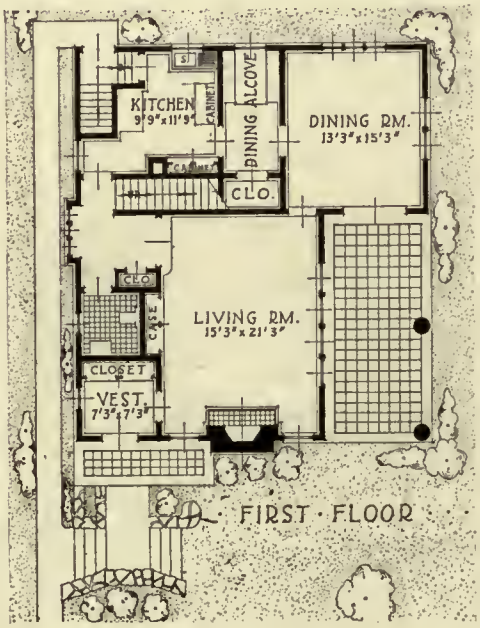
· SECOND · FLOOR · PLAN ·



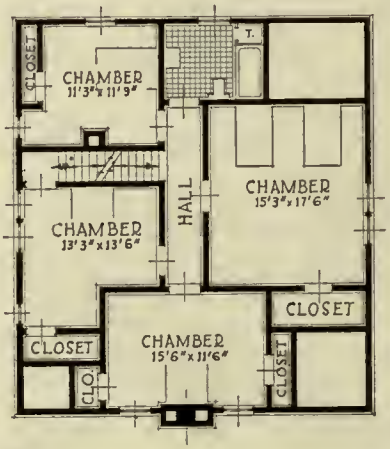
The Palmer

WORDS cannot express the charm of this beautiful home. In detail and color it is superior to the average stucco home of medium size. Built around the massive cobblestone chimney, its lines are pleasing and architecturally correct. The porch can be enclosed with sash and screens making it practical to use winter and summer. This home is 34′ wide and 38′ long.

One enters the living-room through a good size vestibule, equipped with a wardrobe for outer wraps. On each side of the fireplace is a full size window and with the quadruple window on the side, the living-room is always cool and comfortable. From the dining-room a pair of French doors open onto the porch. Between the kitchen and dining-room is a dining-alcove. A downstairs lavatory is very conveniently situated. On the second floor are located four bed-rooms with roomy closets and bath.



· · FIRST · FLOOR · · ·



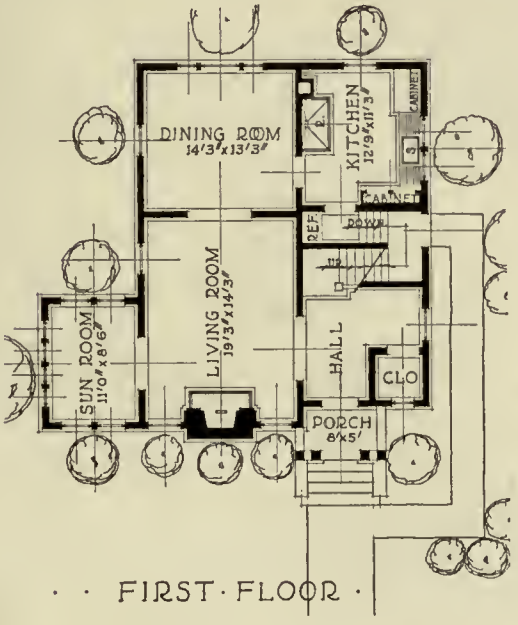
· · SECOND · FLOOR · · ·



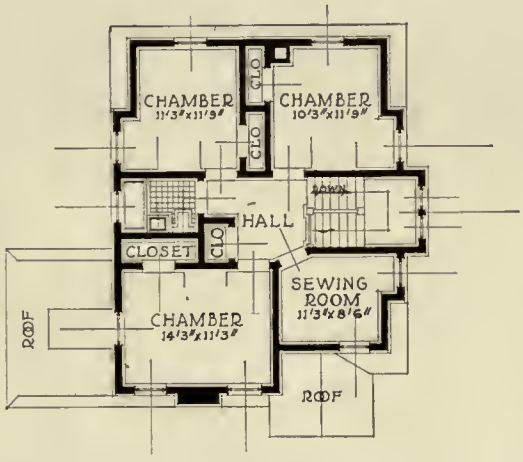
The Hillsboro

An Americanized English type which is modern in design and artistic in appearance. The siding and timbered work when painted or stained a dark brown form a pleasing contrast with the white cement stucco of the outside walls. The entrance is very attractive and particularly adapted to this type of home.

It would be hard to improve upon the arrangement of rooms illustrated. They are large and well proportioned as well as conveniently arranged. You are immediately impressed upon entering this home by the attractive appearance of the semi-open stairway, the space underneath of which is a combination grade and cellar entrance. Living-room, sun-parlor, dining-room and kitchen complete the first floor. The second floor plan contains three bed-rooms, sewing-room, bath and large closets. This plan is 27′ wide and 34′ deep, which does not include the 12′ by 9′ sun-parlor.



· · FIRST · FLOOR · ·



· · SECOND · FLOOR · ·

HEAT REGULATION IN YOUR HOME

How to obtain an even Healthy Heat





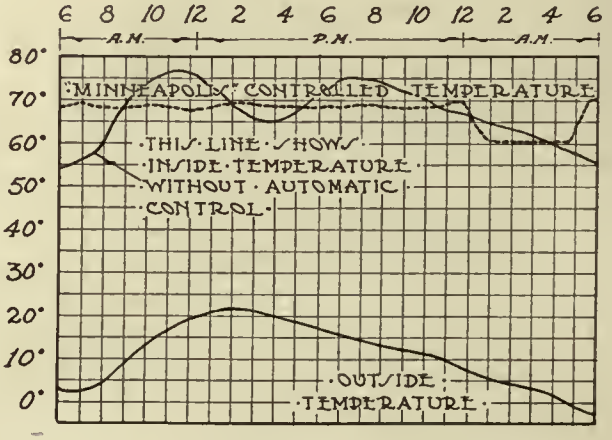
WE HAVE repeated and will repeat many times again through these pages, that a slight additional expense in the initial cost of building a home often results in economy in maintenance. A few dollars invested here is a time and labor saver; a little extra expense there is a health saver; a slight extra cost in another place dispenses with the necessity of expensive paint jobs. And in every instance the added cost doubles and trebles itself in dividends that accrue in the form of greater convenience and endurance, and in added appearance. That is not all. Every home built today is more than likely, sooner or later, to change its character from that intended, the home of the builder to that of an investment. A well appointed *home*, built at a given cost always has a higher investment value than an ill-planned *house* built at an equal cost.

A very important part of a well planned home is the heating plant. The question of heating has probably been abused more than any other part of the home—yet it is entitled to the most consideration. A good boiler must have sufficient radiation properly installed and a good furnace must have the proper capacity of firepot, cold air shafts, warm air pipes and drafts in order to perform their respective duties. Neither the furnace nor the boiler will be entirely satisfactory unless they can be regulated to distribute an even, healthful heat. Proper heat regulation spells: (First) Economy in fuel; (Second) Economy in repairs and upkeep of the heating plant; (Third) Uniform temperature; (Fourth) Comfort; (Fifth) Health; (Sixth) Convenience.

The best heat regulating device on the market today that we are familiar with is the Minneapolis Heat Regulator. This is a "nifty" little device which adds, rather than detracts, to the appearance of the wall to which it is attached. In the milder weather of spring and fall, or during the severe days of mid-winter it very cheerfully admonishes you to "shovel out the ashes and shovel in the coal, and then mind your own business. I'll manage the furnace. I'm very sensitive to changes in temperature. I never get so much interested in a book or a magazine or my company that I permit my ward, the furnace, to burn down the house, and I never get so sleepy at night that I allow him to become neglectful of his duties and let Jack Frost in to 'bust up' the plumbing."

The Heat Regulator saves, on an average, 20% in fuel. Without such a device, the average consumption of soft coal per annum is about 15 tons. At $9.00 per ton, the outlay for fuel is $135.00. With such a device the consumption is about 12 tons, a saving of $27.00 a year. Eliminating the added conveniences and comfort which result, economy alone justifies the installation of this device. But again, let us be reminded that convenience and comfort on the one hand and their absence on the other make the difference between a *home* and a *house*.

The Minneapolis Heat Regulator consists of a thermostat placed conveniently on a wall, a small motor which operates the dampers of the furnace, and a small clock attached to the thermostat. The combination enables one to regulate the hour in the evening at which he desires to lower the temperature for the sleeping hours. Without any further attention this little home companion will go on day after day through the long winter months automatically



adjusting the dampers when you go to bed at night for the proper sleeping temperature and raising the temperature before the rising hour in the morning to the proper daytime warmth—another difference between the *home* and the *house*, and another of those many differences which make for *less*, not *greater* expenditure. The Heat Regulator is a source of convenience and comfort which, as our friend Rastus puts it, "costs mo' whar it ain't."

The Thermostat is manufactured in two models. One is equipped with a twenty-four hour clock and the other with an eight-day clock. All Thermostats are finished in sand blast bronze and can be equipped with any type of motor. There are three different types of motor manufactured to operate drafts: Gravity Motor, Alternating or Direct Current Motor and Spring Motor.

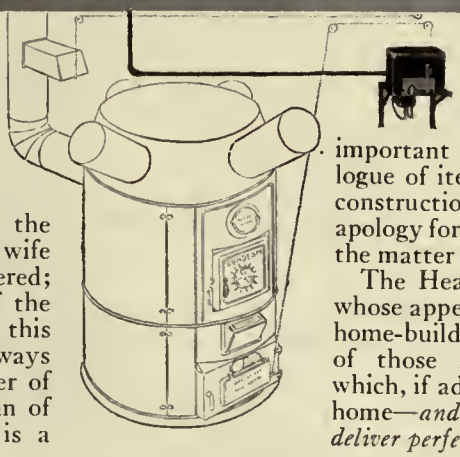
The graph on preceding page illustrates accurately the advantages of automatic temperature control by the Minneapolis Heat Regulator. The solid line at the bottom of the chart shows the outdoor temperature during twenty-four hours of a near-zero day. The solid black line at the top indicates the temperature from 55 degrees at the rising hour to as high as 77 degrees during the day with an abrupt and rather dangerous drop during the afternoon when the furnace fire, dependent upon the personal attention of some member of the household, died down too low to give the necessary warmth. The resultant "firing-up" is indicated by a sudden rise of twelve degrees, from 64 degrees to 76 degrees, a condition which resulted in an unnecessary waste of fuel. The dotted line shows the constant warmth at exactly the desired degree maintained by the Minneapolis Heat Regulator with its automatic drop to a lower temperature during the sleeping hours and its return to perfect daytime comfort before the rising hour.

With thermostat control, the house will never be overheated or underheated. The thermostat never tires, never sleeps, never forgets, never loafs on the job, works twenty-four hours a day, starts up the fire on that zero morning when it's so much more agreeable to turn over and take another snooze than to go to the basement, shivering in your negligee, to stir the fire—all this with never a care on your part. Verily, the Heat Regulator is a valuable little servant, expert in his line, strictly attentive to business, always watchful over the comfort of the house in sickness or in health; when the wife is alone or when the guests have gathered; when you are busy with the affairs of the day, or when you are asleep at night, this attendant upon your convenience is always present and alert—a constant conserver of your time by day and a jealous guardian of your comfort by night. Whether it is a March blizzard, an Autumn frost, a Spring thaw or an Arctic record-breaker on the outside, the little Thermostat sees to it that nothing harsher than a day in June breaks in upon the family circle. And for the privilege of thus serving you the Regulator each year actually pays you in cash the market price of three tons of coal!

Even to the home-builder of moderate means initial cost will not be an argument against this highly desirable convenience, for the Heat Regulator at once argues him down on that point, and at the same time establishes its right to favorable consideration by its guarantee against the care and trouble necessitated by its absence, and by its further guarantee against those extremes in temperature which so often result in serious illness, and so, in another considerable item, the doctor's bills, or still worse, the undertaker's.

We do not exaggerate here. Proper regulation is desirable at all times, but is highly necessary in homes where there are old people or young children. Extremely low and extremely high temperatures are equally dangerous to children and old people, and this is especially true where there is fluctuation from one extreme to the other. As health is the most fundamental and important consideration in the catalogue of items to be reckoned on in the construction of a home, we offer no apology for laying considerable stress on the matter of effective heat regulation.





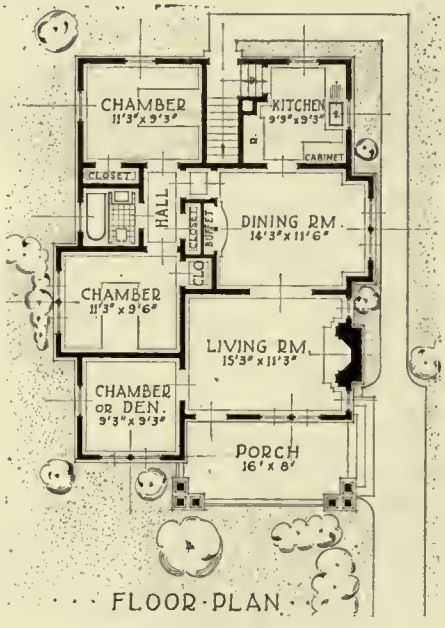
The Heat Regulator is a device of whose appearance and performance the home-builder will be proud, just another of those many distinctive features which, if added to the house, make it a home—*and it will last a lifetime and deliver perfect service year in and year out.*



The Ossining

HERE is an unusual bungalow well suited to American living conditions. The low and pleasing lines of the roof are broken by the front and side gables. It is 26′0″ wide and 34′0″ in length. The interior is arranged to give the maximum of comfort in a small home at a low cost. The porch located across the front is sheltered by the wide projection of porch roof eaves.

The living-room, which is entered directly from the porch, is cosy and cheerful with a fireplace balanced on either side by a casement window. In the dining-room is an attractive bay window and a recess for a buffet. The kitchen is of proper size for both comfort and convenience, and opens to the grade landing leading to the basement. The bath and two bed-rooms open into the hall and the room off the living-room is planned for an extra chamber or den.



FLOOR PLAN



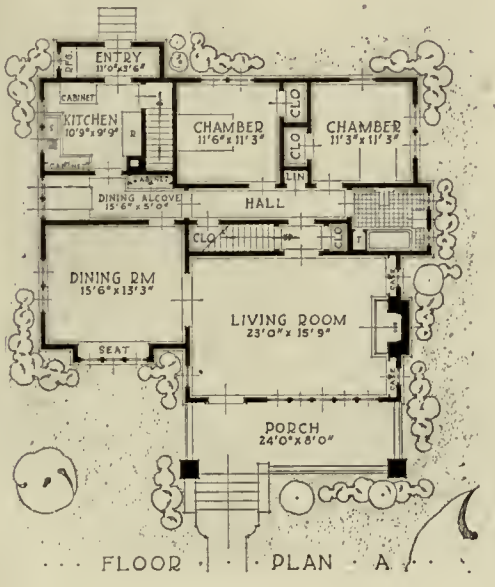


The Westfield

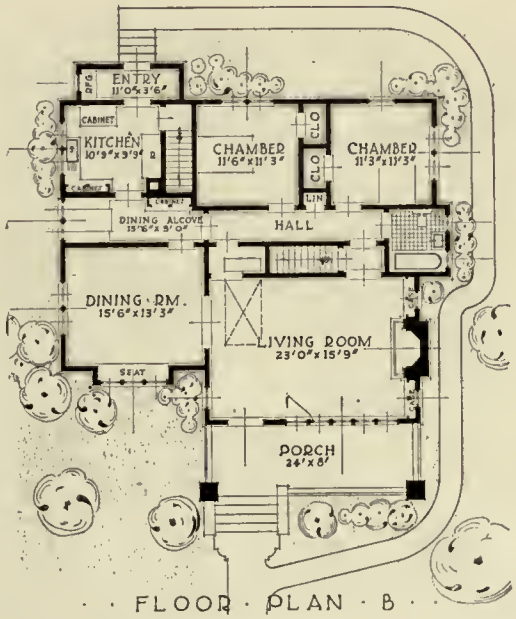
The exterior of this bungalow, with its wide overhanging roof broken by the gable of the porch, is most charming and attractive. The plan is 40′ wide and 30′ deep, not including the front porch, which is 24′ by 8′.

One has a choice of two floor plans which are practically identical with the exception that plan "B" is designed with a Murphy Bed closet underneath the stairs which lead to the attic. This is a very practical and inexpensive installation, and adds much to the convenience of this plan.

The large living-room, with its fireplace and bookcases at one end and grouped windows at the front, is very cheerful and well lighted. From the living-room you can enter the hall, which gives access to the bed-rooms and bath. The space between the dining-room and kitchen is devoted to a breakfast-alcove. The rear entry is designed for a refrigerator and storage.



FLOOR PLAN A



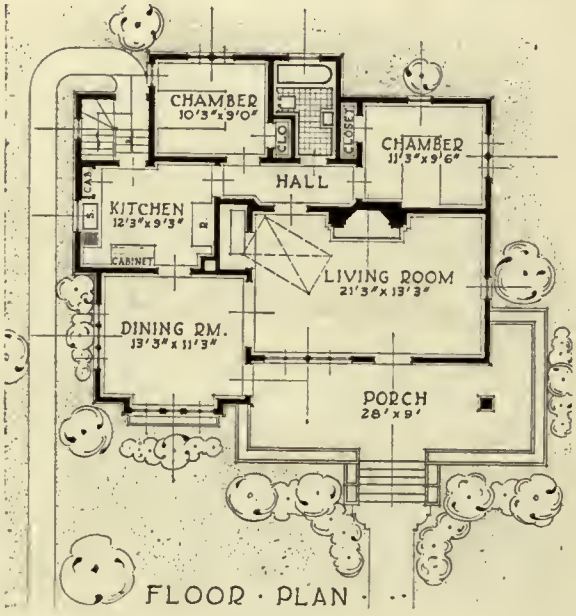
FLOOR PLAN B



The Racine

THIS home with its hip roof, overhanging eaves and projecting scrolled rafter ends is of the more conservative bungalow type. The arrangement and design of the windows in front of the living-room and dining-room add an artistic touch. This plan is 38′ wide and 28′ deep which does not include the projection of the porch.

The floor plan is exceptionally well laid out to incorporate living-room, dining-room, kitchen, two bed-rooms with closets and bath. The closet off the living-room, which may also be used for outer wraps, contains a Murphy Door Bed, which at a small installation cost adds considerable to the convenience of this plan. The opening between the living-room and dining-room can be equipped with French doors or a plain cased arch. The bed-rooms, though small, have cross ventilation and good wall space. The rear entrance is on to a platform which leads to the kitchen and basement.



FLOOR · PLAN





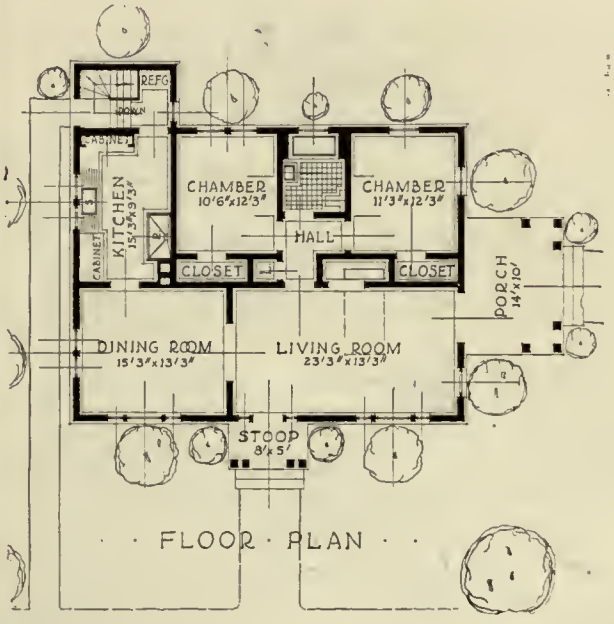
The McKinley

THE exterior of this true California bungalow is made very pleasing by an attractively designed hood over the Colonial entrance at the front and the pergola porch at the side. The exterior wall covering is of bevel siding, but wood shingles stained or painted gray, will also work out very nicely.

On the interior the living-room and dining-room are placed at the front, and are connected with a pair of French doors, which are also used from the living-room to the pergola porch. The kitchen is well arranged, having all modern equipment conveniently placed. The rear entrance is to an addition containing refrigerator platform and combination grade and cellar stairs. Two bed-rooms with good closets and a large bath open off the hall.

This plan has three bed-room efficiency by placing a Murphy Door Bed in the closet off the living-room. This design is 40′0″ wide by 30′0″ deep.



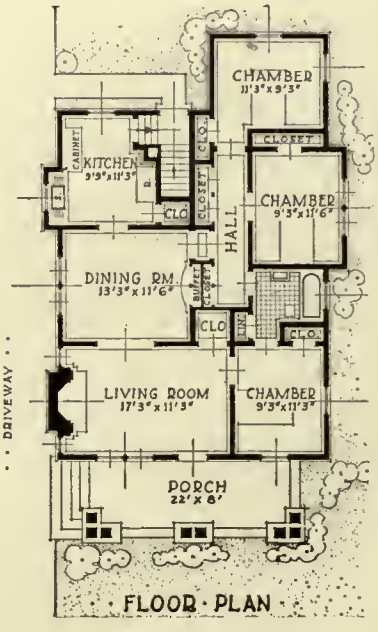


· · FLOOR · PLAN · ·



The Sherwood

A COMFORTABLE home, simple and dignified, yet having a number of embellishments which add to its attractiveness. The porch, with its built-up rail supporting well-proportioned columns in groups, affords privacy during the months when it is in use. This plan is 28′ in width and 44′ in depth or 52′ including the front porch. On the interior every inch of space is utilized, resulting in a well arranged plan, which can be constructed at a low cost. The living-room with its fireplace is a splendid room and connects with the dining-room by a pair of French doors. A recess for a built-in or standard buffet is constructed on the inside wall of the dining-room and adds to its attractiveness. Three bed-rooms with closets and large bath connecting with a service hall are on the right side of the plan. Everyone considering the erection of a six-room bungalow should give The Sherwood serious consideration.



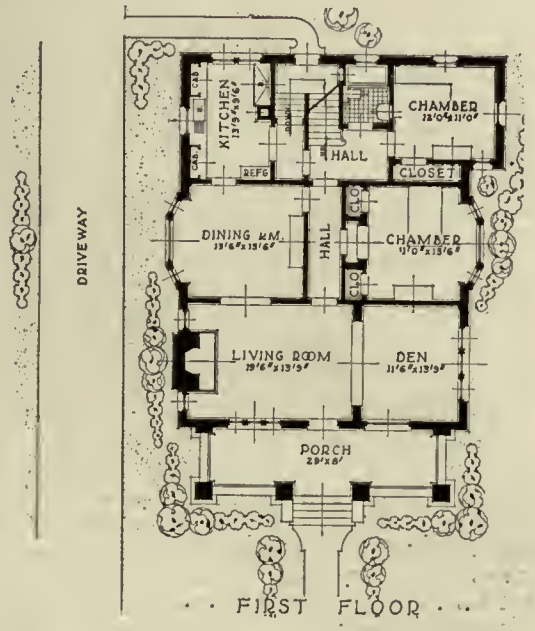




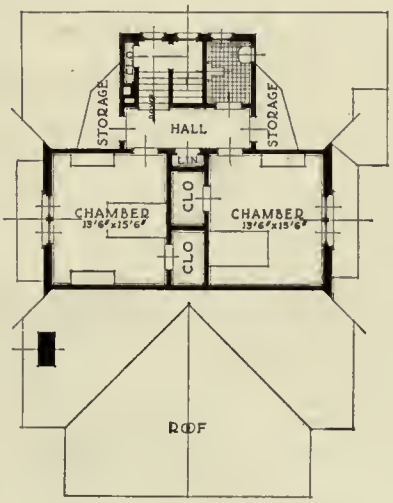
The Bristol

THE beauty of this face brick bungalow speaks for itself. Substantial strength is expressed in all its lines, and the front is made particularly pleasing by the use of white stucco in the gable, the simplicity of which is relieved by heavy brackets and a charming window with a projecting sill.

The living-room and den extend across the entire front of the house, practically making one large room. The dining-room with its bay window is exceptionally pleasing. The rear hall adds privacy to the bed-rooms and bath on the first floor. A door has been placed on the landing of the stairs which lead to the second floor so this part of the house can be shut off. The first floor is arranged complete for a family requiring only two bed-rooms, and the second floor can be finished later if so desired. This plan is 34′ wide by 44′ deep with a 29′ x 8′ front porch.



· · FIRST FLOOR · ·



· · SECOND · FLOOR · ·

OAK FLOORING

I think that I shall never see
A Poem lovely as a tree
A Tree whose young mouth is pressed
Against the earth's sweet flowing breast
A Tree that looks at God all day
And lifts her leafy arms to pray

A Tree that may in summer wear
A nest of robins in her hair
Upon whose bosom snow has lain
Who ultimately lives with rain
Poems are made by fools like me
But only God can make a tree

JOYCE KILMER



FROM the modern woman's point of view, it is almost impossible to over-emphasize the importance of using proper flooring in the home. By proper flooring, we mean materials which will produce a sanitary, attractive and durable surface for the floors of your home.

Perhaps we should apologize for explaining anything so well known and universally standard as oak floors. Our excuse is that everyone knows many things in a vague way, but upon which his thought has never developed into a definite opinion.

Too much thought cannot be given to the importance of oak flooring in obtaining a satisfactory, well constructed home. You naturally associate oak flooring with high prices on account of its supreme advantage and its traditions. You couple the thought of oak flooring with wealth. You feel that oak flooring must be expensive because it is beautiful, durable and sanitary.

The fact is that it costs less than ordinary flooring, plus carpets. Oak Flooring is practically indestructible for it has been known to last over a hundred years. Many of the finest floors in America are to be found in old colonial mansions, better now than when they were laid. No building is too palatial, no home too modest for its use, for it is an economy in any building.

Oak flooring adds to the selling or renting value of any home. Nothing attracts the attention of a prospective buyer or renter as much as well laid and correctly finished oak floors.

The knowledge has rapidly come upon us that an old fashioned floor covered with carpet closely tacked down around the edges is a very unsanitary thing. It catches dust and germs which penetrate under the carpet and cannot be removed by sweeping, and every footfall lets loose a little cloud to poison the air we breathe. This may not be seen, but it takes place nevertheless, even where carpets are kept as clean as possible. It is a difficult task to take up, clean and put down a tacked carpet and it is never done as often as health requires.

Oak floors have solved this problem completely. Their delightfully polished surface may be dusted with almost no effort at all with a cloth covered broom, a floor brush or a "dry mop." The rugs may be taken up for cleaning with little trouble and germs and dirt are then completely conquered.

Today, oak floors are universally conceded to be fashionable, handsome, sanitary, labor-saving floors which give the final touch of elegance, good taste and modern luxury which makes the home what it is. From the palatial residence to the cozy cottage, a home can scarcely be called modern which has no oak floors.

The selection of the proper kind of oak flooring for your home is largely a matter of personal taste and of price.

There are two kinds of oak used principally for flooring, white oak and red oak. The chief difference is that the white oak is lighter in color and of not quite so "warm" a tint as red oak. Your personal preference is the best guide here and most people would quite as soon have one as the other.

Oak flooring is generally laid by men commonly known as floor layers, who specialize on the laying of hardwood floors. They may be divided into two classes—good workmen and careless workmen. The expert floor layer obtains his reputation by the high class and perfect work he turns out. It is practically his only asset in the game. Many large and prosperous floor laying concerns have reached their prosperous condition chiefly through conscientious workmanship in their earlier days. The floor layer that is careless in his work will never succeed.

It is not necessary to be an expert to produce a good job, but it is very essential that considerable care be exercised and all the details from the very start to the finish be carefully studied before the work is taken in hand.

Before starting to lay oak flooring the stock should be examined to ascertain whether it has absorbed any moisture while at the lumber yard, on the wagon, or at the job, as usually during rainy weather oak flooring will absorb considerable moisture—mostly at the ends—thereby causing it to swell as much as one-sixteenth of an inch. If this condition is not discovered before the floor is laid, unsightly crevices will appear in the finished floor. The sub-

floor as well as the plaster work should be thoroughly dry before starting to lay oak floors. If in winter, the rooms should have a temperature of about 70 degrees to insure the best results and the bundles of flooring should be in the rooms at least ten days to dry out thoroughly in case the stock has been subjected to any moisture. Oak flooring leaves the mill in perfect physical condition, but is very often abused by improper handling before it reaches the job. There are many lumber yards and contractors that treat oak flooring almost like rough lumber. This is a mistake.

The sub-floor should be thoroughly swept and it is well to use a damp-proof paper. Where sound-proof results are desired a heavy deadening felt is recommended. The sub-floor should be of serviceable wood, but not less than 7/8 inch thick, dressed one side to an even thickness. The sub-floor boards should be nailed securely to the joists, but not driven too tightly together so as to permit them to swell and later on to bulge. Four inch to six inch strips are preferred widths for boards in sub-floors.

When starting with the first oak flooring strip, it is well to leave at least 3/8 inch for expansion space between the first strip and the baseboard, and likewise at the other end of the room, as there is more or less expansion and contraction in all kiln-dried flooring. Oak flooring should always be laid at an angle to the sub-floor and after laying and nailing three or four pieces use a short piece of 2 x 4 inch hardwood placed against the tongue and drive it up with a heavy hammer.

The nailing of oak flooring is very important. All tongued and grooved oak flooring should be blind-nailed. The best flooring made can be spoiled by the use of improper nails. We strongly recommend Cement Coated Nails, as this kind of nail has a holding power exceeding 100% over ordinary nails. For 13/16" use 8 penny Cement Coated Flooring brads. For 3/8" use 3 penny Cement Coated finishing nails. The maximum distance between nails should be:

For 13/16" thickness..... 16"
For 3/8" thickness..... 8"
For 1/2" thickness..... 12"

The floor layer should use discretion in regard to certain strips that do not blend in color with the majority of strips. A few badly discolored pieces should always be set aside and used in closets and other out-of-the-way places. Where there is a wide variation in color it is a good policy to separate the pieces before they are nailed down. This insures a more regular run of color and better blending together than if scattered throughout all the rooms. Every floor layer should watch this feature of his work closely, as it is the appearance of the floor after it is laid that counts.

Oak floors, with care, should last a lifetime and it is for this very reason that all floor layers should be very particular when they lay oak flooring. The wood itself practically is never permitted to wear; that is, in the better grades that are used in homes It is the wax or varnish that wears, which is always replenished. Honest and careful workmanship on the part of the floor layer spells success. A good job of floor laying is the best of advertising, while a poor job gets nothing but kicks and no rewards.

Oak floors of the better grades, or in all homes where people dwell, are always scraped. In order to get the best results for a nicely finished surface it is best to scrape it. The scraping can be done by the ordinary scrapers, such as are used by cabinet makers, or by one of the many types of power or hand machines that are generally used by contractors and carpenters. Always scrape lengthwise of the wood and not across the grain. A floor properly scraped looks very smooth, but it should be thoroughly gone over with No. 1½ sandpaper to obtain the best results in finishing. After this the floor should be swept clean and the dust removed with a soft cloth. The floor is now ready for the filler, which should be put on as soon as possible after the laying work is finished, for the filler closes up the pores of the wood and keeps it from shrinking.

A little extra precaution by the workmen, in wearing rubber soled shoes and keeping the floors where it is necessary for them to work covered with heavy paper or canvas, will prevent marring and unnecessary dirt.

Oak floors are the foundation of room decoration, and may be finished to harmonize with hangings and furniture coverings. In this way, the owner may express his individual taste, and have floors that are different from others. By judicious use of plain and quartered stock, red and white, and various finishes, such as natural, weathered, gray, and others of equal beauty, oak floors are made to contribute to the decoraative scheme of interiors, and are a joy to the home lover. These new finishes are illustrated in colors in literature mailed on request by the Oak Flooring Bureau, 1014 Ashland Block, Chicago, containing also full information on the uses and advantages of modern oak floors.

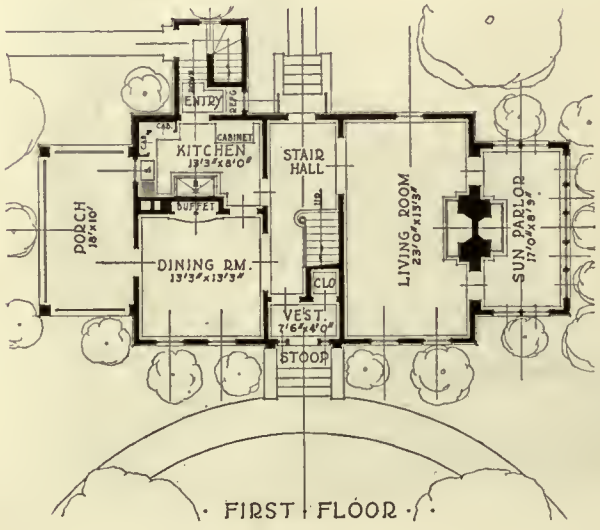




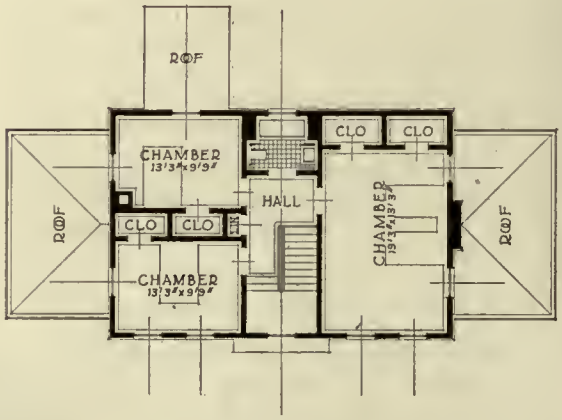
The Jeanette

HOSPITALITY and warmth radiate from this beautiful Colonial home. It is well proportioned and well balanced by the open porch on one side and sun-parlor on the other. The main part of the house proper is 36′ wide but with the extension of the porch and sun-parlor is 56′, thus requiring a lot with a frontage of at least 75 to 100′. Its depth is 24′, which does not include the projection of the entry at the rear which contains stairs leading to the basement and a convenient place for refrigerator.

The closet in the vestibule provides a convenient space for outer wraps. To the right of the hall is a long and comfortable living-room. The living-room and sun-parlor are connected by a French door on each side of the fireplace; one of these doors can be omitted if more wall space is required. To the left of the hall is a cosy dining-room with an entrance to the open porch. The kitchen and entry are very efficiently planned. The second floor plan shows a compact arrangement of bed-rooms, bath and closets about a central stair hall. Linen closet placed in a very handy position for extra storage.



FIRST FLOOR



SECOND FLOOR

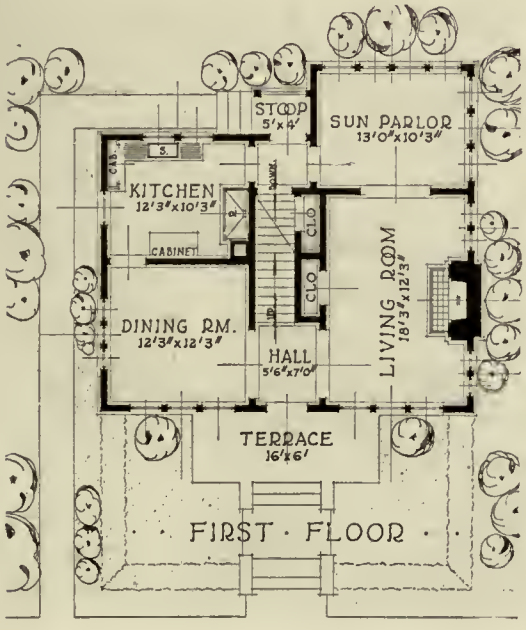


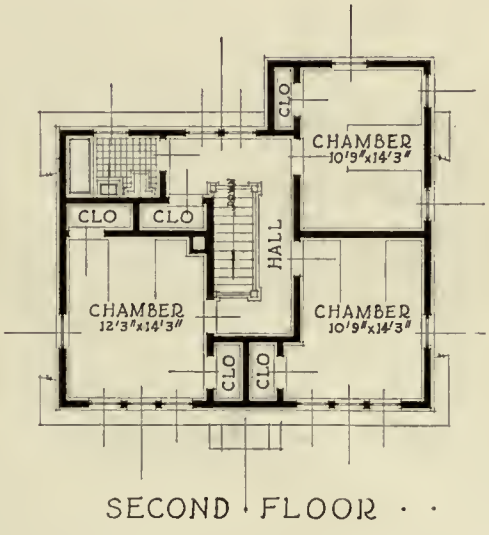
The Chelsea

This Dutch Colonial type is always popular and will be a credit to the home builder in any community. The wide siding, splendid window arrangement and hooded entrance create a pleasing effect that will always gain the most favorable comment of passers-by.

The spacious living room with sun parlor connected with French doors at the rear gives the necessary atmosphere to that part of the home where one spends the most time. To the left of the entrance hall is a well lighted dining room and kitchen with ideal arrangement of equipment for the efficient preparation of meals. If the opening between the sun parlor and rear entry is not desired it can be closed, forming a good place for refrigerator.

On the second floor are three large bed rooms, each with cross ventilation and good closets. The bath is conveniently placed off the hall. This home is 32′ wide and 30′ deep.







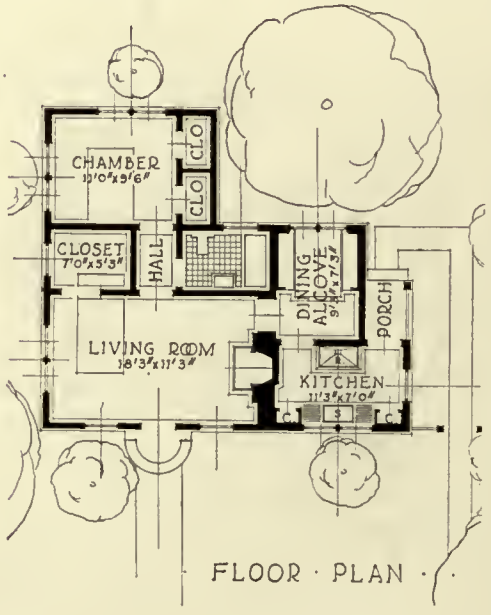
The Pasadena

This little home contains all the comforts of a larger plan. It is well designed and can be constructed at a very low cost. A woman is no longer a slave to her home. She is entitled to more time for other activities. The Pasadena was designed to lessen the work of the housewife and still be efficient.

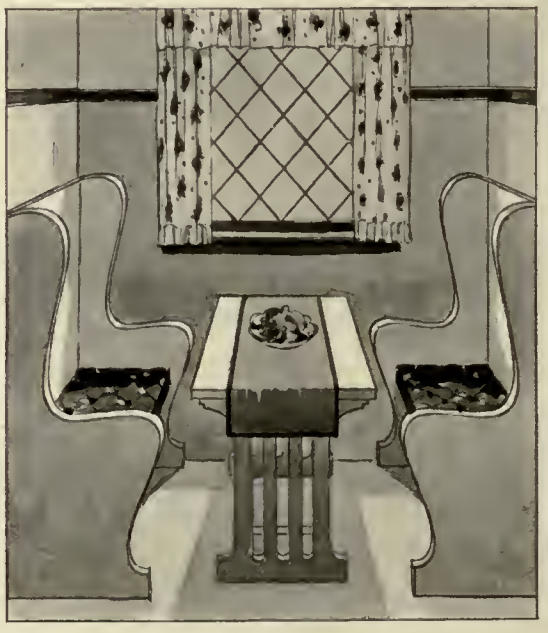
The large living-room contains cosy fireplace and good window arrangement. The Murphy Door Bed designed in the closet off this room converts it into a bed-room at night. The closet is also large enough to be used as a dressing-room for the occupant of the bed.

A small hall separates the main bed-rooms and bath from the living-room. The dining alcove with built-in Pullman fixtures has a seating capacity for five people and connects with a complete kitchen.

This home is 32′0″ in width and 28′0″ in depth which includes the projection of the bed-room.



FLOOR · PLAN



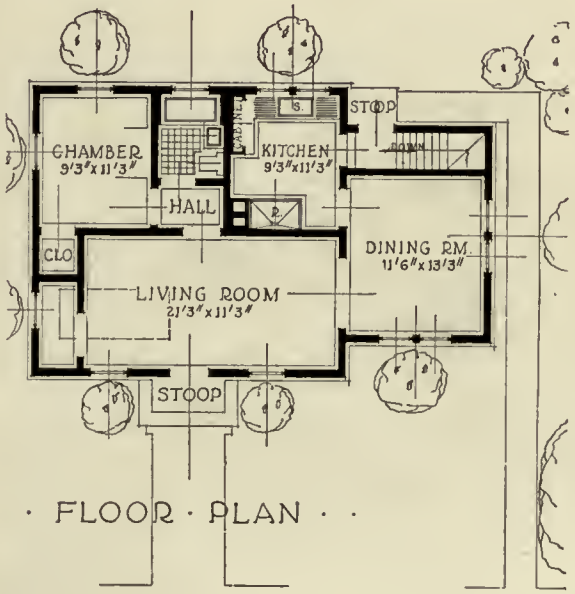


The Rembrandt

THE home illustrated above is an attractive, small Colonial design which may be quickly and inexpensively constructed. The entrance is into a large well planned living-room, which contains a closet at the left, convenient for outer wraps. A Murphy Door Bed is also concealed in this closet, which when lowered into position, makes the living-room a sleeping room at night. A space saving feature of this kind will be appreciated by every owner of a small home, as it does not mar the appearance of the room when not in use and adds considerable to the efficiency of the home.

A pair of French doors open from the living-room to the dining-room, containing good wall space, and well arranged windows. The kitchen is complete and has a rear entrance to grade platform and cellar stairs. A small hall separates the bed-room and bath from the living-room. This design is 38′0″ wide and 24′0″ deep and is one of the most popular of our smaller designs.





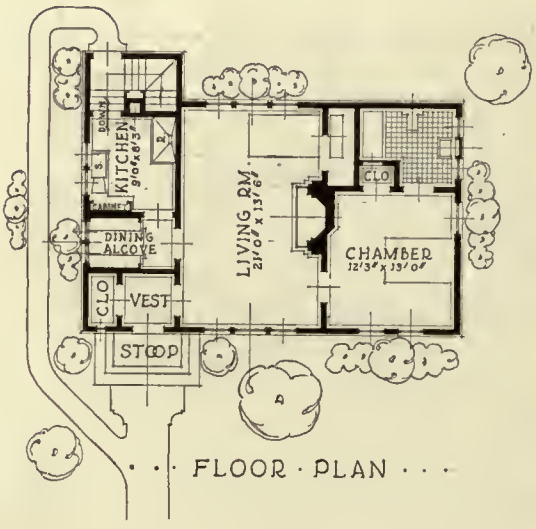
· FLOOR · PLAN · ·



The Chester

This home has a picturesque appearance enhanced by grouped windows and the steep pitch roof broken by the gable and dormer. It is a typical Colonial bungalow and was designed to give every modern convenience at a small cost.

The vestibule is an admirable feature in a small home as it provides a place for outdoor wraps. The living-room is exceptionally roomy for a home of this proportion. The triple windows at each end admit plenty of light and ventilation. By the installation of a Murphy Door Bed as shown by the plans, extra sleeping accommodations are provided when necessary. The bed-room and bath are directly connected. A dining-alcove, kitchen and grade entrance complete the floor plan. For a home of this size it provides a maximum of comfortable living space. It is 30′ in width and 22′ in depth; a charming home for a small family.



FLOOR PLAN



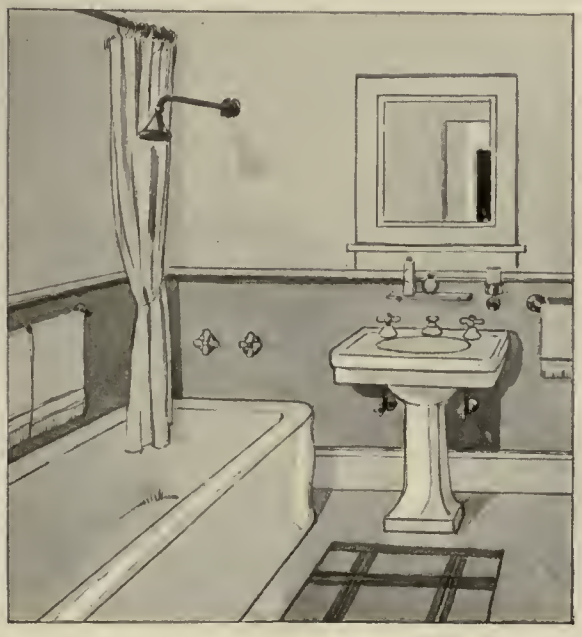


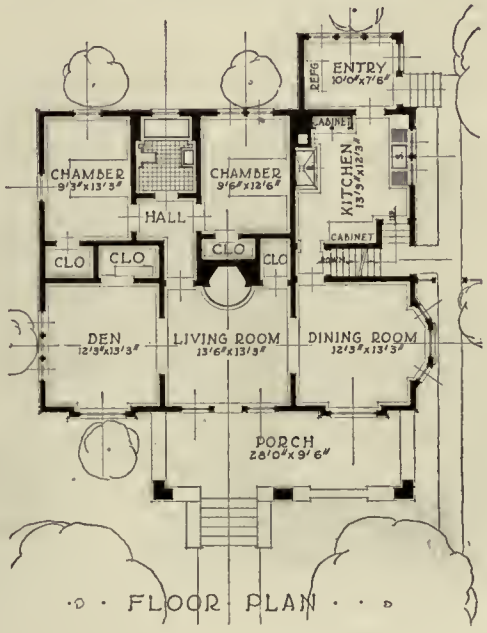
The Greensboro

A TRUE bungalow in every sense of the word. It appears to have grown out of the ground and adjusted itself to the beautiful surroundings. It is a harmonizing design radiating hospitality, warmth and good cheer. It is large and provides a comfortable place for warm summer evenings.

When entering this home you will be immediately impressed by the attractive arrangement of the living-room, dining-room and den across the front of the plan. The living-room has an attractive fireplace placed on the inside wall with closet at the right for outer wraps. The partition which separates the living-room and den, can be omitted, forming one large room if so desired.

The closet off the den contains a Murphy Door Bed giving this plan three bed-room efficiency. Kitchen, two bed-rooms, bath and rear entry complete the plan. Size 40′ wide x 32′ deep.





FLOOR PLAN

METAL WEATHER STRIPS

"Blow high, blow low, not all its snow
Could crush our hearth-fire's ruddy glow."

—WHITTIER

THE Quaker poet penned this couplet in the days when timber was thought to be a nuisance, an obstruction to progress. The ruddy glow of the great fire-place is a thing of history and the dying embers which marked the end of those perfect days of long lost youth live now, and glow and die only in the memory of men and women who have past many milestones since that which marked life's meridian. Before the westward sweep of empire, the giants of the woods which had proudly withstood the storms of centuries, have bowed their stately heads and paid the penalty imposed by civilization.



Time was when the finest Maple, Beech, Oak and Hickory could be had for the cutting, and when mountains of blocks of this now rare building material was piled high against Jack Frost's invasions. Then, even soft coal was a luxury, which only the rich could afford as fuel. With the vandal's destruction of our timber lands, wood as a fuel practically passed.

Then came that other fuel as the heating agent for the home of moderate means, and the wood fire glowed only in the home of wealth.

Three dollars, three-fifty, four dollars, five dollars, six dollars, eight dollars, ten dollars a ton, tells in figures the onward and upward march of the price of soft coal as a fuel and the time is now when every pound of coal must, of necessity, be made to yield the utmost possible service in the way of protection against the cold of winter.

Vast improvements have been made in the way of radiation, distribution of heat, complete combustion, but it has only been a matter of a few years that any considerable attention has been given the subject of weather stripping against the invasions of King Winter. It was thirty years ago, eighteen ninety-three, when the first company was organized in Detroit for the exclusive manufacture of Metal Weather Strips. It was the original purpose of this company to manufacture a strip that would supply the buyer with an equipment that would not only be practical when first installed but that would stand the severe test of weather and time. That company now claims, with every justification of usage, time and experience, that its ambitions have been fully realized in the perfection of a metal weather strip that meets every demand for utility, effectiveness and durability, and that company signs its name, "Chamberlin Metal Weather Strip Company," and it gets its mail at Detroit, Michigan.

Not so long ago a gentleman of the writer's acquaintance scoffed at the idea of a weather-stripping as only another scheme to ride the poor home-builder. We challenged him to make an investigation with us as to the reliability of the claim made in favor of metal weather-stripping. A house of better than the average construction was used for the experiment. We quote from the figures and data tabulated. At a distance of one foot from the windows, on a zero day, the temperature was 52°; at a distance of three feet it was 57° and at a distance of five feet it was 60°. The fact was, that just about 50% of the volume of the house was heated at a proper temperature, while the other



Corrugated Side Strips



Meeting Rail



In Opening Casement



Wide Brass Thresholds

half was from 10° to 18° below what is considered a healthful temperature.

But that was not all, nor the worst. Cold air being heavier than warm air, the colder air at the sides settled to the floor with the result that at the floor, even near the center of the room, the temperature was only 58° while at a head-level of those seated in the room it was slightly above 70°. At the head-level of those standing it registered 73°.

In a house much inferior to this one in point of material used and cost of construction, but where metal strips had been installed a similar test was made. Here, we found a different condition entirely. At one foot distance from a window, the thermometer registered 67°; at three feet and farther 70°. At the floor the temperature was 69° while at the head level of those seated in the room it registered 70°. My friend was convinced.

It has been scientifically demonstrated by such noted engineers as C. M. Nichols and H. W. Whitten that under a wind pressure of ten miles per hour a sash with a clearance of 1/16 inch will admit 31 cubic feet of air per minute, while the metal stripped window reduces the cubic footage admitted practically to the zero point. At twenty miles per hour the figures are fifty-seven cubic feet and five and three-tenths cubic feet per minute. At thirty miles per hour 83 feet and 9 and 6/10 feet. In other words the non-stripped window, under wind pressures of twenty miles per hour and higher, admits nine times as much winter into the house as does the metal stripped window. By actual tests extending over hundreds of cases and covering all kinds of weather, the saving of fuel by weather stripping ranges from 25% to 40%.

But economy in fuel and greater temperature comfort are not the only advantages that obtain from the installation of the metal strip. One advantage that naturally follows that mentioned above is the elimination of dangerous drafts.

Then there is that uncanny rattle,—a veritable false alarm which excites the naturally timid imagination to its wildest performance in those ghostly hours after the mid-night bell.

But ghost and goblin and the more substantial midnight intruders can no longer depend on the constant rattle of sash and pane to lull their unwary victims to sweet dreams whilst they prowl about the premises. The metal strip has done its work and when there comes that noise at the window it is not a false alarm,—it is a call to arms against him who would rob the dweller within of his substance. The metal strip eliminates the rattling window.



Inside Door Bottoms

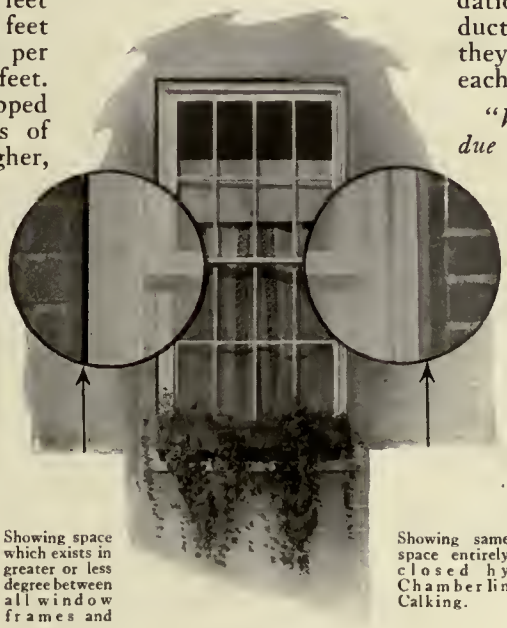
A thousand letters were sent out not long ago to users of the Metal Strip, inquiring what features of this equipment appealed to those who had installed it. Two hundred thirty-seven mentioned saving of fuel; two hundred thirty-two, elimination of drafts; one fifty-seven, elimination of rattles; one fifty-seven, elimination of dust; one forty-four, mentioned even temperature; eighty-two, easy sliding windows; seventy-seven others, various other benefits and advantages. That the company manufacturing this device are serious in their recommendations and guarantees of their product is evidenced by the fact that they insert the following clause in each of their contracts:

"We agree to correct any defects due to imperfect material or workmanship under normal usage, during the life of the building."

In other words the company guarantees the Metal Weather Strip to last as long as the building lasts, and to give satisfactory service in every way for the lifetime of the building. Installations made as far back as 1893 are, without exception, in as good condition as they were when first installed.

We have gone into some

(*Continued on page 143*)



Showing space which exists in greater or less degree between all window frames and masonry.

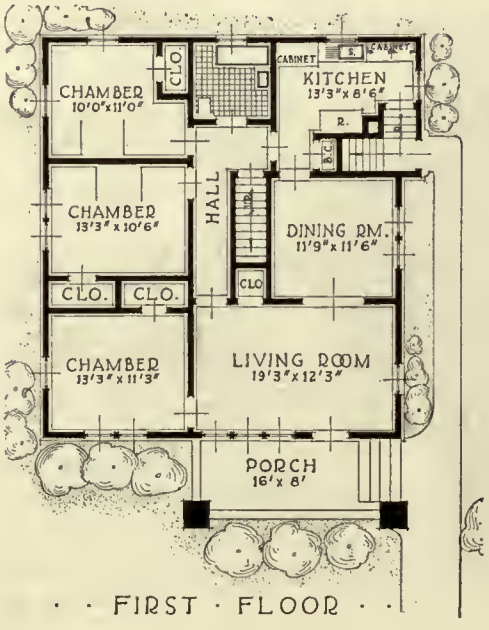
Showing same space entirely closed by Chamberlin Calking.



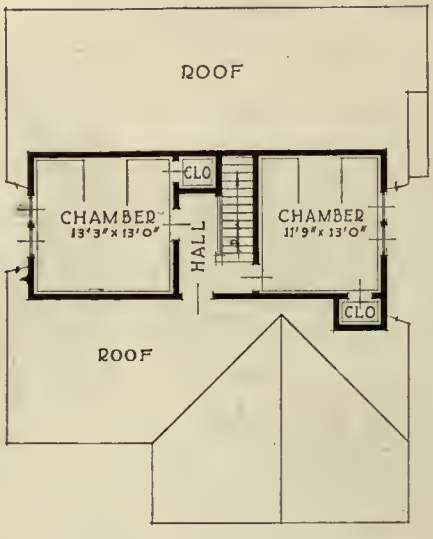
The Hartford

This bungalow, with its exterior of white Portland cement stucco, cosy front porch and broken roof lines, expresses taste and individuality. The size of this plan is 34′-0″ wide and 38′-0″ deep and it is surprising to know that it is possible to design eight large rooms in such small space.

The first floor contains a large living-room, dining-room, kitchen, three bed-rooms, three closets and bath. The hall separates rear bedrooms and bath from the remainder of the house and also contains a stairway leading to the bedrooms on the second floor. The stairway has been inclosed so that the upstairs can be shut off or left unfinished as desired. The rear entrance is onto a grade platform which leads to the kitchen and cellar which is designed for a full basement. This design is sure to make many happy, satisfied homebuilders.



· · FIRST · FLOOR · ·



· · SECOND · FLOOR · ·



The Lincoln

THE rooms of this charming Colonial bungalow are large and cheerful. The exterior is charming in its simplicity. Ascending to the porch by the wide front steps one enters directly into a spacious living-room with a cheery fireplace at the one end and at the other an archway leading into the dining-room. The hall off of the dining-room gives access to bath and two large bed-rooms with closets.

The rear entrance is to a stairs leading to a platform at grade and then to the cellar which is planned to be excavated under the entire house to contain fuel room, coal bin, fruit room and laundry.

The Lincoln is an ideal bungalow for a small family and is sure to please its owner. Its size is 36′ x 26′ which does not include the projection of the kitchen or of the rear bed-room. It requires a lot having at least a frontage of 50′.



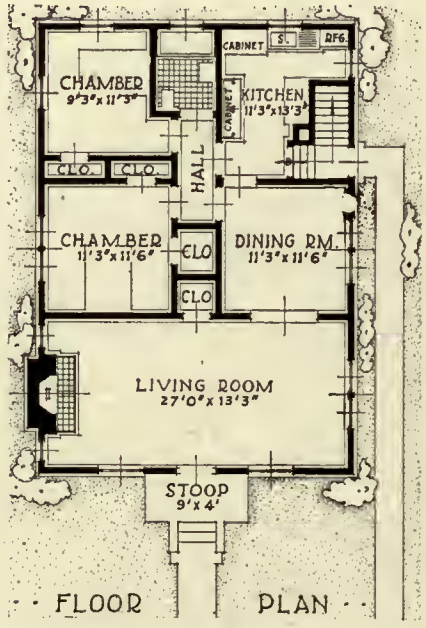




The Olympia

THE artistic, cosy bungalow presented here will undeniably be a pleasant sight to the passers-by as well as a source of pride to its owner. Painted white with green shutters it will have that clean-cut appearance that creates favorable comment. It is 28′ in width and 40′ in length. The roof lines are very unusual and give it an added charm.

The floor plan meets with all the requirements of a small family. Living-room, dining-room, two bed-rooms with closets, bath and kitchen with a grade cellar entrance complete the floor plan. The living-room is particularly worthy of mention, being 27′ long and 13′3″ deep. It contains cosy fireplace at one end and good wall space which will permit an attractive arrangement of furnishings. If a third bed-room is desired the fireplace may be placed in the right wall and a partition placed so to divide the living-room forming a 10′3″ x 13′3″ bed-room.



FLOOR PLAN

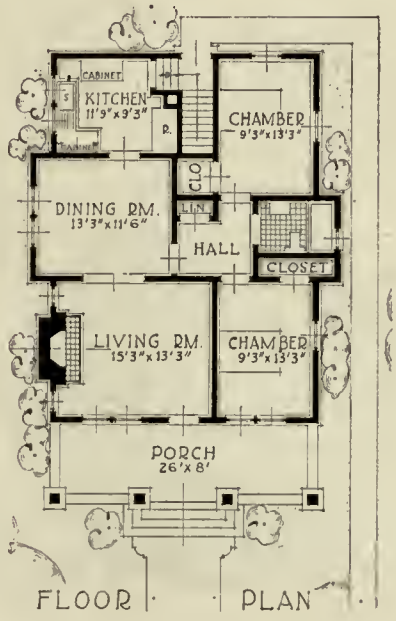




The Rochelle

THE charming little bungalow illustrated above was designed to embody all the ideas gained from years of experience in the planning and building of small homes. The size, position and arrangement of the rooms are all that can be required of a five-room house. It is a labor-saving and servantless home, planned for economy in construction and operation, yet providing every comfort.

The main roof of the house extends out over the porch which is 26′ by 8′ and with its solid built-up rail affords privacy and a comfortably cool place in summer. At a small additional cost the porch may be screened. The front door leads directly into the living-room, which has a cheerful fireplace designed in one side; windows on each side of the fireplace are of the casement type and are set sufficiently high for bookcases or furniture to be placed beneath them. The opening between the living-room and dining-room has been intended for French doors but can be increased in width for a cased or pedestal arch. The kitchen in back of the dining-room has the mullion windows designed so that the sink can be placed underneath. It also has cabinet, pan cupboard and all equipment necessary for a modern kitchen. The chimney flue at the side of the range contains a hopper door which leads to an incinerating chamber in the basement for the disposal of all garbage, waste, etc.



A linen closet in the hall which enters off the dining-room adds much to the convenience of this home. This hall also separates the two bed-rooms and bath from the main part of the house. The bed-rooms are 9′ 3″ by 13′ 3″ and have good sized closets. The bath-room is roomy and a medicine chest with mirror door has been designed in the partition over the lavatory. The size of this house is 35′ wide and 36′ deep and is designed for a full sized basement which can be divided into laundry, fruit-room, fuel bins and heating-room.

This plan can be reversed so the bed-rooms and bath are on the left side, if this arrangement will be better suited to your lot.

Which means if your lot is located so your house will face the West, the living room, dining room and kitchen will be on the North side. If it is more desirable to have these rooms on the South and the bed rooms and bath on the North you may order reversed plans. This may not seem important but it is always advisable to consider the position of your rooms, as well as the location of the house upon the lot, before staking out your house and starting your excavation.



MODERN PLUMBING

DID it ever occur to you? It is not likely that it ever did. It is not likely that it ever could have occurred to you that the first bath tub installed in an American home stirred up a rumpus, nation wide in its scope, which, for the time being, overshadowed the controversy over slavery and the then threatened civil disruption and relegated to the back pages of the metropolitan dailies all head-line references to the squabble between those north and those south of Mason and Dixon's line. Yes, the bath tub has a history, and for a time startling headliners carrying "scoops" on the latest legislative enactments against the bath tub were eagerly scanned each day by the op and pro ponents of the introduction of this institution into our American life.

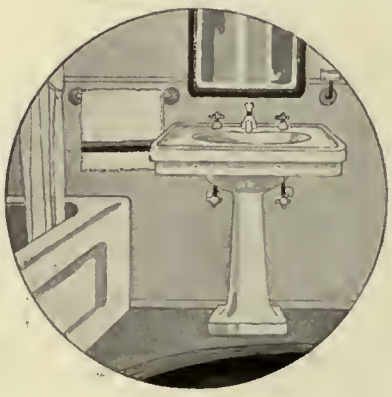
And did you know that one, Adam Thompson, a denizen of Cincinnati, then the metropolis of the Buckeye state, even in those days of flaming political strife, at once was the subject and the object of more invective on the one hand, and of more eulogy on the other, than even the wily John Tyler who, from 1841 to 1845, sat in the first chair of the first house of the first city of this United States of America? You probably didn't know this, for Quackenbo's history omits to mention it.

Yes, Adam Thompson's bath tub was the subject of a controversy, long and bitter,—so bitter, in fact, that it made the warfare waged about "foxy" John Tyler, look sick and puny and insipid and of secondary importance.

This Adam, of bath tub renown, in the year of our Lord one thousand eight hundred and forty one, and of our Republic, sixty one, while the memory of our late unpleasantness was still green in the minds of Clay and Webster and their confreres, made an extended visit to the Mother Country with a view to making a study of her institutions. It was while calling upon His Highness, Lord Whatsname that Adam was first introduced to the Bath Tub, a contrivance which permitted His Highness to completely submerge, and which was hitched up to permanent pipes installed in the Chamber of the Bath, in such wise as to humor His Highness' varying moods for hot, cold and indifferent water.

Adam returned from England the latter part of the year 1841, all zealed up with the idea of introducing this foreign institution to his compatriots in America. On his arrival in Cincinnati he assembled the timbers, siding and other material necessary for the erection of his bath tub, and by the end of the year 1842 his ambitions were realized, and the first bath tub in America was unveiled and formally dedicated to the service whereunto it was sent. The dedicatory services were held on Christmas Day, 1842, a day and a year made memorable by the event.

Had the reincarnated spirit of the architect of Noah's ark stepped in on the little party of men who stood about Adam Thompson's bath tub on that historic occasion, he more than likely, would have exclaimed, "What, another flood!" For the dimensions of Adam's boat would not have compared very unfavorably with the length and breadth and height of Noah's craft.



Though Adam's contrivance had been designed to accommodate but one performer at a time, its length, width and depth approached the dimensions of the modern natatorium with sufficient proximity to make it quite appropriate to dub it a swimming tank rather than by

the less ambitious sobriquet which classified it with the genus, tub. It was seven and one-half cubits long, four cubits wide and three and one-half cubits deep, and had a net capacity of six hundred gallons!

But the way of the bath tub for the next two decades was hard. The public laughed it to scorn; the newspapers slandered it, satirized it, ridiculed it; the doctors denounced it; legislators made it a crime. And from the Lakes to the Gulf, from Maine's pine-clad hills to the wig-wambed banks of the "Father of Waters," legislative halls rang and reverberated with eloquent expostulations of statesmen who hurled their anathemas against the bath tub, or of those who, on the other hand, stood beside the tub and hurled back a valiant defense.

Patriots trembled at the thought of grafting on the tender branches of our budding Republic this Old World institution. It was a child of Despotism, conceived in the bed of Plutocracy, and nurtured in the cradle of Aristocracy, and they would have none of it—not under the shadow of the spreading eagle and beneath the fold of the Spangled Banner—no, siree, Bob—not if the last red drop had to be spilled from "the hurted wound." How inspiring to know that the same zeal and earnestness and high resolve that characterized the weighty deliberations of the fathers throbs within the breasts of our solons, when questions of like moment still stir the passions of a nation.

Even that fly-wheel of the Universe whose intellectual momentum keeps progress on the move; whose intellectual equilibrium like a dependable gyroscope equilibrates the world in its onward march somewhere—yes, forward-looking Boston, seat of baked beans and Harvard College, by legislative enactment made the ownership or the harboring of a bath tub a crime!

But the bath tub survived the onslaught of zealous statesmen and of jealous pill venders, and today takes rank in America with the necessities of life.

With the evolution of the bath tub came naturally the evolution of other items which today complete the bath room of every modern American home, whether in the metropolis, in the cities of moderate size, or on the farm.

The complete bath room is already "sold" to every prospective home-builder in the country, and it only remains for those of us in the position of counsellors to advise him as to plans, specifications and details, and as to the requirements of an up-to-the-minute bath room, and such other plumbing fixtures as the demands of a modern home make upon the manufacturer of such goods.

Here, as elsewhere, the homebuilder will look for convenience; he will look about for fixtures that will stand up well under reasonable usage; he will not be guided wholly and solely by the lowest initial cost, but by that economy which spreads out over many years; and he will demand that, in point of appearance, the plumbing fixtures which he installs shall be in keeping with the quality of, and in harmony with, the other appointments of his home.

What constitutes the plumbing equipment essential to the making of a modern home? First to be considered here is the bath room. The up-to-the-minute bath room, aside from those things which enter into the item of construction, will include a bath, a lavatory, a shower and a closet.

The fact that the bath room has become the center of health and comfort in the well devised and well governed home, renders it highly advisable that this essential part of the house shall possess charms peculiarly its own. Here cleanliness and health begin, and for that reason, if for no other, the artistic expression of the bath room should be that of tidiness, daintiness, cheeriness and immaculate cleanliness. It has been with this thought in mind that one of the largest manufacturers of high class plumbing fixtures, the "Standard Sanitary Mfg. Co." of Pittsburgh, has come to look with favor upon the enameled—all-over fixtures. Such goods answer every requirement. They do not conceal or hide or render invisible foreign accumulations, but, on the contrary, expose them so startlingly to view as to demand and command immediate attention.

It is true that the right kind of fixtures—fixtures that meet all the requirements which sanitation, service and appearance impose upon them, cost a trifle more in initial outlay, but the difference in cost is not as great as might, at first, be expected. It is impossible to equip a bath room with even a cheap grade of furnishings at a cost of less than one hundred dollars, and the Standard Sanitary Mfg. Co. has made it possible to equip a bath room complete with high grade furnishings at a cost of from one hundred and twenty-five dollars up.

It is our judgment, borne out by years of experience and observation, that repair bills and other items of expense the first two or three years will more than eat up any savings which may be effected by the cheaper initial installation. What is the result? At the end of the second or third year the purchaser has on his hands an unsatisfactory job that will give him permanent grief, whereas, better judgment in first buying would have given him a satisfactory job



for a lifetime with little or no expense in upkeep. The old adage, "The best is always the cheapest," obtains here as it obtains elsewhere.



A bath room, to be complete, is not, of necessity, a room of large dimensions. A complete individual bath room with all the facilities of a larger one can now be built into a space as small as five feet square in the clear. Such a bath room is by no means a miniature, for it will easily accommodate a full five foot built-in bath with shower and shower curtain, the space-saving lavatory and the regular closet. The cost of equipping such a bath room will range anywhere from one hundred and twenty-five dollars to two hundred and fifty dollars, depending, of course, on the character of the fixtures desired.

We have just mentioned the built-in bath. Another word here. As one advertiser puts it, "Bath tubs have progressed from 'just bath tubs' to built-in bath." Such a bath has several decided advantages over the old style bath tub, supported by legs. Ask the woman who has kinked her back a few thousand times in her efforts to extricate dust, dirt and moisture from behind and from beneath that built-to-order inconvenience—the bath tub on legs—just ask her to express herself on the subject of the old bath tub, and if she makes a profession of religion she'll more than likely call in a non-church friend to express her sentiments by proxy. And if she doesn't make a profession she probably will, when the built-in bath replaces the tub which has been responsible for her back-sliding.

There are other advantages of the built-in bath. They are five inches lower than the tub supported by legs, and for that reason, are easier to get in and out of. If the bath room is to be tiled there is the saving of tile and labor by reason of the fact that the built-in bath covers a portion of the floor and wall. In planning a bath room we urgently recommend that the built-in bath be given favorable consideration, and for the reason that we are acquainted with the supplies manufactured by the Standard Manufacturing Company, of Pittsburgh, and know that the choice of their goods is a guarantee of quality at a reasonable cost, we unqualifiedly endorse their fixtures. Their guarantee is a guarantee of permanent satisfaction, good taste, and economy all the way. Those who are contemplating a building program should address the company for their catalogue, "Standard Plumbing Fixtures for the Home."

The built-in shower is almost as much of a necessity as the built-in bath. For a quick bath nothing will equal the shower, and nothing is more exhilarating than a cold shower just as nothing is more quieting and restful than a hot shower. But it is not necessary to go into the merits of the shower with a public that has had the experience the American people have had. Suffice to say that a built-in shower can be easily installed along with the bath, and at a very small cost.

On the other hand, a shower to be used in all seasons and especially for a cleansing bath, should be supplied at all times with a sufficient supply of hot water. The ordinary house range boiler or small gas heater will supply only a limited amount of hot water and its temperature soon declines to a minimum. For this reason and for satisfactory service, an instantaneous gas water heater is recommended with as direct a connection to shower as possible. In this way, a sufficient quantity of hot water is supplied but it has the added advantage of being constant and even in temperature.

For reasons similar to those given for the installation of the Standard, porcelain enameled bath, we recommend the Standard Porcelain Enameled Lavatories. These lavatories are in use in every part of the civilized world where quality counts, as the sale of nearly six millions of them in a little more than twenty years will bear testimony. The Standard Porcelain Enameled Lavatory ranges in price from eighteen dollars up.

The subject of closets is one the average person understands very little about from a scientific and mechanical point of view. Here is an opportunity for a mighty lot of trouble and we caution the builder against connecting with a concern that is not well established, and whose record for efficient service is not well known.

Of all plumbing fixtures there is none which should be more carefully selected than the water closet, one reason being that its principal operating mechanism is permanently immersed in water, and it should, therefore, be of the very best quality to successfully withstand the corrosive action of the water in use in many localities. Another reason is the important sanitary function the closet must perform.

Our confidence in the "Standard" manufactured by the Standard Manufacturing Company, of Pittsburgh, is evidenced in no way quite so forcibly as our willingness to put our stamp of endorsement on their water closet. It has stood the test of usage for a number of years and we have yet to hear of one dissatisfied customer among their several millions of clients. Their trade mark on any fixture is an absolute guarantee of durability, economy, and satisfactory service, and that, in a water closet, is highly desirable. Right here we wish again to add an urgent word of caution to those who are in the market for this particular piece of furniture. "Safety first" in this connection is our best word.

There is no doubt that a well planned kitchen if attractively decorated and properly equipped will eliminate a lot of the objection to kitchen work, keep the housewife in a better frame of mind and would tend to keep servants longer. The stove, table, cabinet and sink should be placed as to necessitate the fewest steps. If possible place the sink under or near a window. This arrangement will provide ventilation and also furnish light so that one can see when the work is done properly.

There is but one material—Porcelain Enameled Iron—of which sanitary, up-to-date kitchen sinks can be made in all the sizes and shapes necessary to meet the varying demands on this article. No kitchen sink can be considered complete without at least one, and preferably two drain boards. Every woman wants a place to drain dishes after washing them. In washing dishes the sink proper is needed for the dish pan, and the dishes must be drained and dried either on a drain board or on a nearby table.

Many sinks are made minus the drain board, and when the builder is considering the question of quotations on prices he should be sure to inform himself as to whether this necessary adjunct is figured into the cost price submitted, or whether it is figured, minus this device. As a rule the manufacturers quoting prices on sinks, having this attachment built in, quote but very little higher than one would have to pay for the sink and the building on of a drain board. The porcelain enameled drain board built integral with the sink has a decided advantage over the sink with an expedient attached. Look into this matter carefully before deciding in favor of a sink quoted at any material disadvantage in price over its competitors.

The wood drain board is insanitary, hard to keep clean, and must be refinished frequently, whereas, the enamel sink with one or two drain boards, all in one piece, will, with ordinary care, last a lifetime; and the first cost constitutes the entire investment. It is wiser to economize elsewhere than in equipment which involves health and sanitation.

No doubt we all can remember the inconvenience caused by "wash day" when the kitchen was converted into a cluttered work shop of wash tubs, benches, wringers and boilers. Compare this with the present laundry designed in modern homes. Laundry trays with hot and cold water taps, electric irons and washers all conveniently arranged in the basement in such a way that the day that was once one of drudgery now passes by hardly noticed. "Standard" laundry trays represent the finest and most efficient equipment for the home laundry. They should be placed as near basement windows as possible so this part of the basement can be white washed and well lighted.

Nothing about the home makes more for the appearance of tidiness, cleanliness, sanitation and proper appointments than do the plumbing fixtures. They will either make or mar the home, other things being fairly passable. It is, therefore, highly necessary that these fixtures be of superior quality in the way of appearance and of resisting the absorption of coloring matter. Enamel of good quality possesses these qualities as does no other substance excepting glass.

And the worst piece among the plumbing fixtures will give the whole job its character. The last fixtures we deal with here are the laundry tray and sink. The same arguments for porcelain enameled fixtures elsewhere obtain with the laundry equipment. And here, as elsewhere, we add once more, and finally, that "the best is the cheapest."

No one knows quite so well as the man who has had the experience, what troubles may develop, nor how many of them, nor how bad, by the improper installation of the plumbing job, and of the installation of fixtures short of the best in quality. One repair bill is far more than likely to make up the difference in cost between a poor job and a quality job. This leaves out of account altogether the damage done to plastering, floors and walls, as a result of faulty workmanship or faulty manufacture. It also leaves out of account the severe inconveniences that sometimes result from plumbing catastrophes.

As a final word, we once more urge the importance, first, of dealing with reliable concerns; and second, of having a plumber on the job who understands his business.

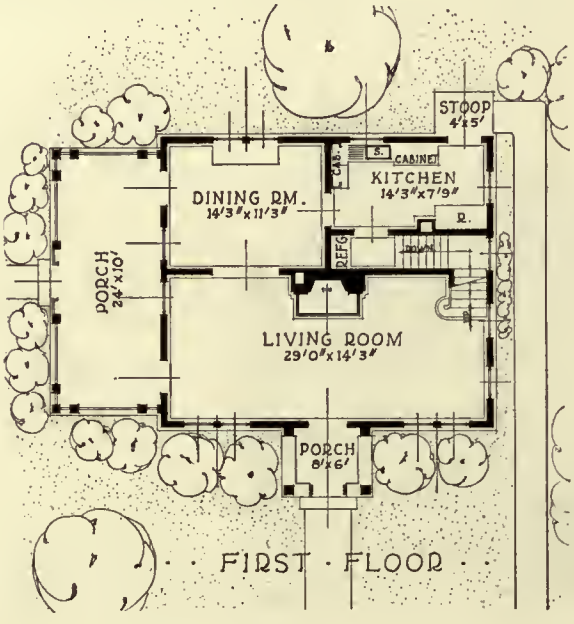




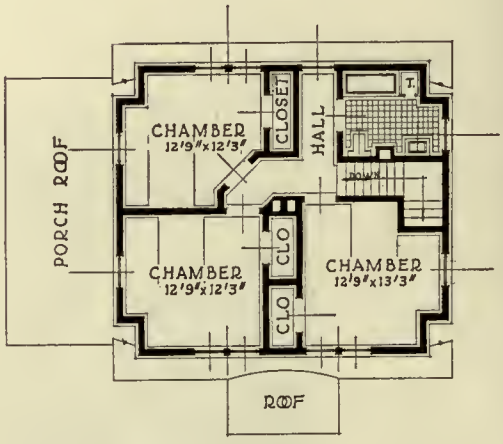
The Lawton

THIS Dutch Colonial home is made attractive by a well designed front entrance and comfortable porch at the side. It should be constructed so that it will set close to the grade, either by building a terrace around the foundation walls or making a deep excavation, in order to show up to the best advantage.

The floor plans are ideal for a home of this size, the rooms being well proportioned and conveniently arranged. The large living-room contains a cheerful fireplace and semi-open stairs leading to the second floor. The opening between the living-room and dining room is planned for a pair of French doors which are also used to open from these rooms to the screened porch at the side. The rear windows in the dining-room are placed high, making good wall space for a buffet. The upstairs hall opens into three large, well lighted bed rooms and good sized bath. Size 30′ wide and 26′ deep.



· · FIRST · FLOOR · ·



· · SECOND · FLOOR ·



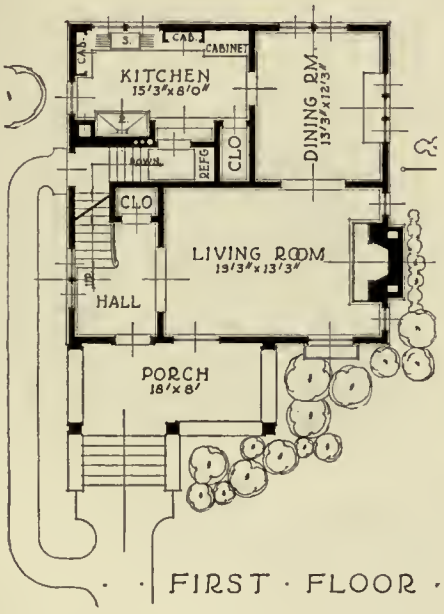
The Loraine

VERY few words are necessary to describe this beautiful two story cottage. Its exterior appearance and interior arrangement will not fail to kindle the desire to "Own your own home."

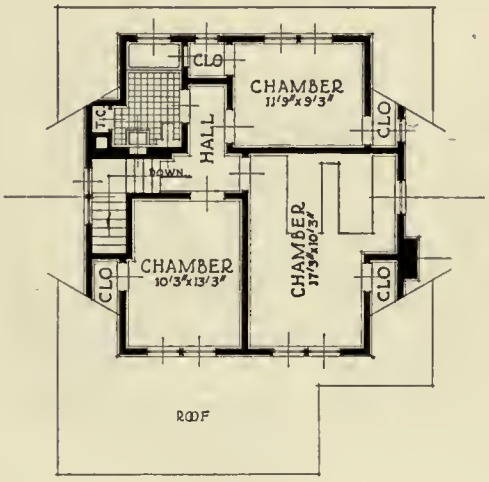
The exterior walls are covered with wood shingles stained silver gray, but will look equally as attractive if wide Colonial siding is used. Lattice work on the porch, combination panel and roller slat blinds and flower boxes add to its cosy appearance.

The plan contains entrance hall with closet, living room, dining room and kitchen on the first floor. Three bed rooms, closets and large bath are well arranged around the upstairs hall. The space under the main stairs is used for grade and cellar stairs and refrigerator platform convenient to the side entrance.

To the housewife the kitchen spells satisfaction, for it contains everything that makes the work in this part of the home a pleasure. Size 28′ by 28′.



FIRST · FLOOR



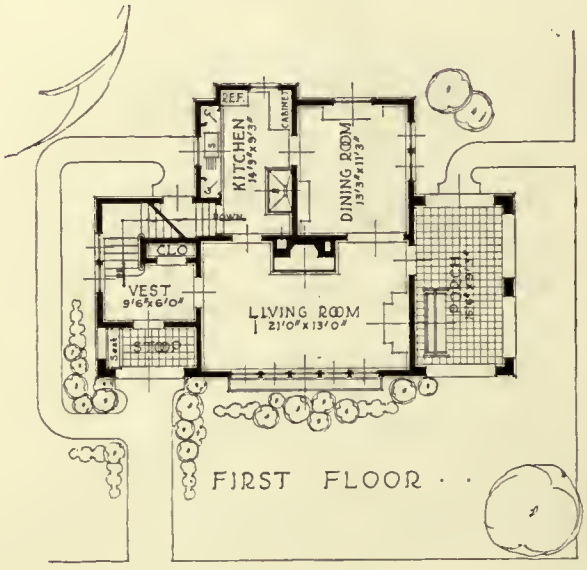
SECOND · FLOOR

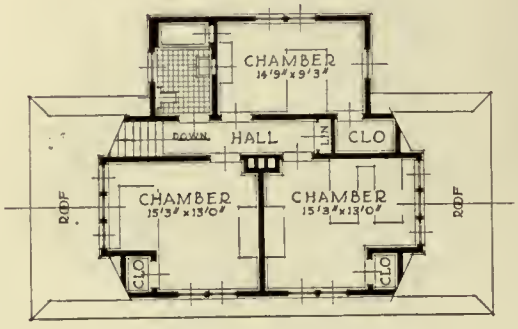


The Cedars

Although this home has the appearance of a small cottage, it contains all the conveniences found in designs of much larger size. The sloping lines of the roof, exterior walls of Portland white cement stucco and good window arrangement make a very interesting exterior.

Constructed under the main roof is a small inset porch which gives the necessary protection to the front entrance. A well arranged hall contains semi-open stairs leading to the second floor, clothes closet and built-in seat with hinged top. The openings between the dining room and hall are equipped with French doors. A large, well designed porch opens off the living room at the side. The kitchen is well arranged to admit all the necessary equipment and leads to a combination grade and cellar entrance. The second floor plan contains large bath and three bed rooms each designed with windows on two sides for cross ventilation, and good closet space. The size of this attractive home is 32′ wide and 28′ deep and with the side porch will require a 60′ lot in order to have the proper setting and show to its best advantage.





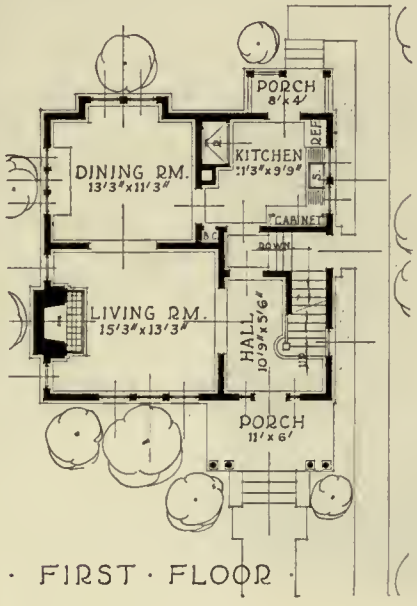
SECOND FLOOR



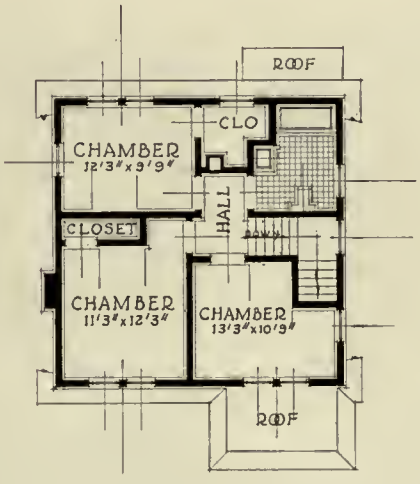
The Howard

THIS Colonial gambrel-roof home is a good example of the modern American adaption of early Dutch architecture. The front porch is a departure from the hooded entrance which is usually designed on a home of this type. A pleasing contrast in color scheme can be obtained by painting the window shutters and flower boxes dark green and the body of the house white or ivory. The size of this home is 26′ square and is suitable for a narrow city lot. If a sun-parlor or screened porch is desired it can be placed at the left with a door opening from the living room or dining room.

The first floor plan contains entrance hall, living room, dining room and kitchen with combination grade and cellar entrance underneath the main stairs. The opening from the hall to the kitchen saves many steps for the housewife. Bath, three bed rooms and closets are arranged around the upstairs hall. A full basement contains heating plant, fuel-room and laundry.



· FIRST · FLOOR ·



· · SECOND · FLOOR · ·

MODERN SPACE-SAVING BEDS

"Man works from sun to sun, but woman's work is never done"

THE modern woman is no longer a slave to her home. However much money a builder may have to invest in a home, he aims at four objectives: Appearance, Convenience, Durability and Economy. In other words, he means to make every dollar invested go just as far as possible in the way of a conveniently appointed, well planned and attractive appearing home.

Whether the home he contemplates is to be an elaborate structure or whether it is to be a neat little "cosy," the builder usually sets a limitation to the amount he intends to invest and that in turn renders necessary certain economies. Morever, the massive pile of lumber, brick and mortar of that other day, built into an inconvenience they called a house, has passed into history and interests nobody but the antiquarian.

We do not mean to say that the day of the large elaborate house has passed, but we do mean to say that the day of superfluous rooms and halls, waste space and waste materials which constituted the stately inconvenience of our grandfathers, does not furnish models for the present-day home. The modern homebuilder prides himself on maximum convenience with the minimum cubical contents. The old-fashioned kitchen which offered enough floor area for a skating rink would not have been so bad if grandma had been provided with the rollers. The modern kitchen is a miracle of convenience and economy as a labor-saving device.

In the old home, the floor area that was devoted to front parlor and back parlor has been joined in the modern home and furnishes a large, comfortable living-room and, if properly designed, it will add the efficiency of another room by the installation of the equipment which makes it practicable to use as a bed-room at night. Health-saving, labor-saving and money-saving devices in the planning of the modern home are the rule and not the exception. Among these economies the Murphy In-A-Door Bed has a prominent place in the modern home. It has the advantage of lessening the number of rooms which must be cleaned, straightened up, curtained, etc. by a woman's hand. When one room does double duty there is one less room for the woman to wash curtains for, one less room for her to sweep and dust, and less floor space to be cleaned and polished.



While Murphy Door Beds were originally designed to be installed in city apartments, they have also come into popular favor in the designing and construction of small homes. The fact is, that with its use a five-room house may be so built and designed today that it offers greater convenience and capacity for service than a six-room or seven-room house of the past generation.

Let us enumerate the number of places in the home where this modern equipment can be installed adding the efficiency of an additional room at a very small cost. First, the living-room which is naturally designed to contain comfortable floor space can open into a small closet which conceals the bed during the day; when lowered into position it converts this room into a comfortable sleeping chamber at night.

Its installation will not mar the appearance of this room, for, when not in use it is concealed in such a way that anyone not familiar with the exact lay-out of the house will not have a suspicion that the closed door conceals this practical equipment. Sun-parlors are usually constructed with good floor area and suggest an ideal location for the installation of a Murphy Door Bed so that it can be converted into a sleeping porch at night. Many dining-rooms are also practicable for this equipment. It may be installed in almost any bed-room on the second floor, making it possible to use this room as a sewing-room, living-room or children's play-room in the daytime and with practically no effort at all it is converted into a comfortable sleeping-room at night.

Murphy Door Beds are so constructed that a small child is capable of lowering one into position for use and of raising it up into the closet or dressing room. Then—it is only a matter of seconds before this room is arranged for daily use.

In these days when communities begin to realize that they are investing millions in churches and schools whose doors are closed for 50 or 95 per cent of the time and when they are beginning to demand more from these investments than in the past; when great manufacturers have begun to realize the futility of investing large sums in plants which lie idle a great portion of the year and have begun to double and treble the value of their investment by the double and triple shifts, and when transportation companies have begun to see a way to double the transportation service with little or no increase of equipment, is it strange that homebuilders of America have begun to look about for like economies in the planning of



their homes? The Murphy Door Bed is but little more expensive than a bed of the ordinary type and its installation in the planning of the home adds an extra room to the home for every bed used. If, in the planning of the library, provision is made for a "Murphy" the library at once becomes a library during the hours it is needed as such and a bed-room when it is necessary to furnish additional sleeping accommodations.

As stated before, so far as appearances are concerned, when the bed is concealed there is no suggestion that the room is ever used for anything but a library. Your most fastidious guest will never have a suspicion that your reading-room might also be used as a bed-room, for when the bed is folded in he can have no way of knowing that the door which conceals the bed does not lead into the dining-room or some other room in the house.

By such a device you have saved the initial expense of an extra room and the constant drain of maintenance. In other words, it is the modern way of using all of your home all of the time, not all of it a part of the time.

Murphy Door Beds are made in all standard sizes and in many attractive designs and finishes. It is possible to obtain enamel and wood finishes which will harmonize with the other furniture of the room in which it is to be installed. It offers anything and everything that any bed can offer plus convenience and the double capacity of the room at only a small additional cost.

When erecting a home it never costs more to build right than wrong, and correct planning and designing usually doubles the capacity and convenience of your home for real service.

The amount of space required for the closet in which to conceal the bed will vary according to the size of the bed you select. The full size requires a closet 2 feet 6 inches deep and 5 feet 10 inches wide, and a standard size door 3 feet by 7 feet in the opening. The three-quarter bed can be installed in a little smaller closet and in the installation of the twin type, the amount of space necessary will depend upon the way in which they are installed. If the doors are used in pairs, the closet requirement is about 2 feet 2 inches in depth and 7 feet 8 inches in width. If single doors are used in the openings, the width of the closet will have to be increased to about 9 feet. We have illustrated a large number of our homes with the practical way in which a two bed-room home can give three bed-room efficiency and other ways in which this installation can be used to make your home more practical and serviceable.

This bed cannot fall or raise by accident, and is different from other beds only in the fact that it can be removed by day, making the floor space it occupies at night available for other uses. It is also easily and safely operated, so that a little child can be trusted to handle it. The mattress and bedding are held in position ready for use when lowered. It is a "regular" bed and its use means the saving in construction of an extra room and the work of taking care of it even to that little job of "cleaning under the bed."

Many of the finest homes in the country are equipped with these beds. It is neither a poor man's bed nor a rich man's bed; it is both. For, as we have said repeatedly, the modern notion of the homebuilder, whether the home be a fine suburban palace or a nifty little "cosy", is to make his dollars go as far as possible; make them buy as much convenience, beauty and durability as possible. The wealthy builder of today points with particular pride to the home conceived in his own brain and combining maximum convenience with minimum cubical contents and one of his ways of attaining that ideal is the inclusion in his plan of just such conveniences and economies as the Murphy Door Bed "the rich man's delight and the poor man's friend."



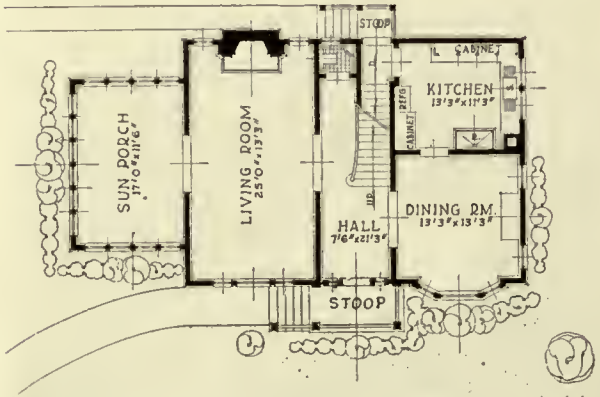


The Worcester

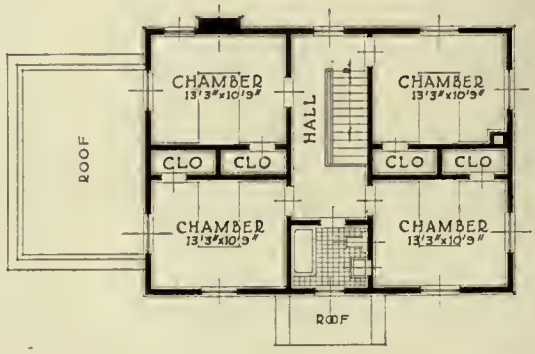
The realization of a beautiful home is obtained in the architectural simplicity of this design. With Colonial siding painted a pure white and the roof and shutters green, it needs little else to make a good impression. The artistic hooded entrance covers an attractive French door which opens into a deep hall containing a beautiful Colonial staircase leading to the second floor. A space at the rear of the entrance hall has been designed for a lavatory but can be converted into a closet for outer wraps if so desired.

The French doors between the living-room and hall and living-room and sun-parlor offer an opportunity for very effective arrangement of this part of the home where one naturally spends most of his time. The dining-room on the left of the hall is worthy of special mention because of its nice proportions and wall space. The four bed-rooms on the second floor occupy corner positions so that they have light and air from two sides. Each bed-room is designed with good closet space and the bath-room, which is connected with the central hall, is sufficiently large so that a linen closet and medicine chest can be incorporated if desired.

The size of this home is 36′0″ wide and 26′0″ deep, to which must be added the sun-parlor projection, which is 12′0″ by 18′0″ We have designed the entrance with the left side to the front, which makes it convenient for a narrow lot.



· · FIRST · FLOOR · ·



· · SECOND · FLOOR · ·



The York

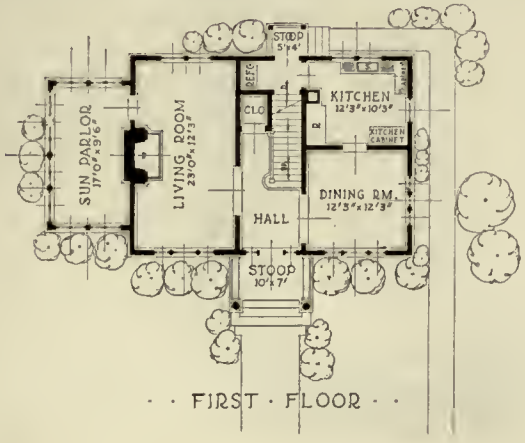
THIS Dutch Colonial home should find favor with many, as its exterior appearance and interior arrangement will wear well and prove to be exceptionally practical. It is designed particularly for a corner lot, the front and sides presenting a pleasing appearance. The size of the house proper is 34′ wide and 24′ deep, which does not include the sun-parlor addition, which is 18′ by 10′. A lot having at least a frontage of 60′ should be purchased to give this beautiful home a chance to show up to the best advantage.

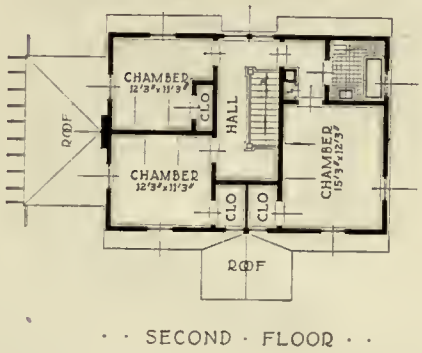
The hooded entrance opens into the hall, supplied with good space for outer wraps in the form of a closet in the rear. The arrangement of windows in the living-room and sun-parlor assure this part of the home of good exposure, no matter in what position the building may be placed on the lot.

The cheerful fireplace and unusual wall space in the living-room offer opportunity for effective furnishing. On the right side of the plan is a well proportioned dining-room and kitchen, which are both well lighted and designed to meet all the requirements of a modern home. The rear entry off the kitchen is designed to give both an outside and inside entrance to the basement and also give sufficient space for a refrigerator.

The second floor has three nice bed-rooms and bath, the bath being located at the rear of the master's bed-room with a connecting hall giving added privacy. Each bed-room has ample closet room, which will not escape the attention of the housewife.

The plan is all that can be desired and one owning such a home as this is to be envied.



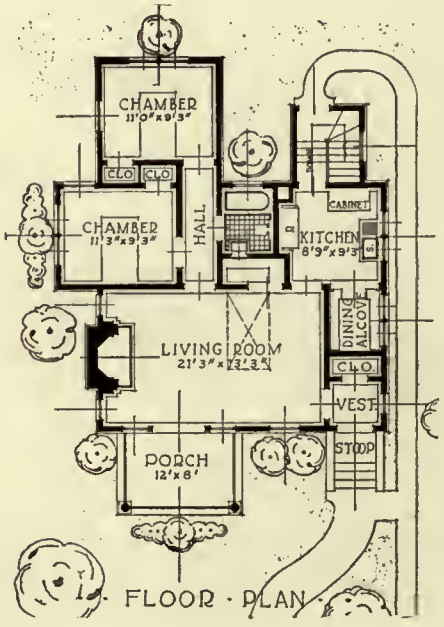




The Tiffin

THIS type of Colonial bungalow is much in favor due to its pleasing appearance and possibilities of low construction cost. The use of wide siding, solid paneled front door, hooded entrance and oddly shaped dormer are features worthy of mention. The width of "The Tiffin" not including the projection of the center bed-room is 28′ and the length from the front wall to the back wall of the rear bed-room is 36′.

Today many small homes are designed without a dining-room. A breakfast alcove is installed for general use and space saved by eliminating the dining-room is added to the living-room where a drop leaf table can be used should additional table space be required. The large living-room also serves another duty by the installation of a Murphy Bed in the closet. Two bed-rooms with closets, bath and kitchen complete this practical little home.



FLOOR · PLAN



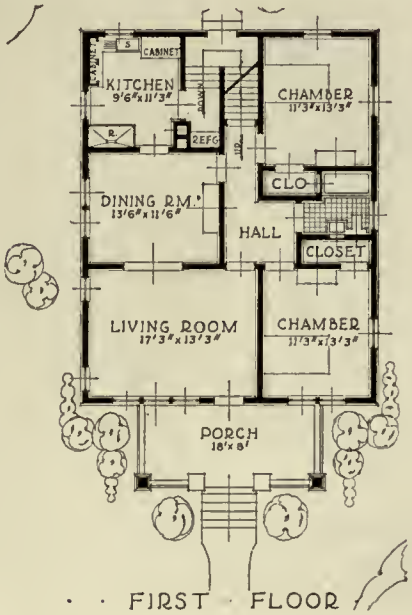


The Redford

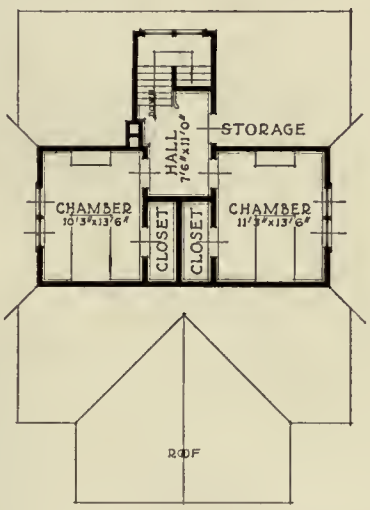
This story and a half bungalow is simple yet dignified in design and affords all the comforts of a modern home. The large porch with lattice railing extending down to the ground and exterior walls of Portland white cement stucco makes an attractive exterior.

An examination of the floor plans will reveal a very convenient arrangement for a small home. The first floor contains large living room, dining room, kitchen, two bed rooms and bath. The hall, which opens off the living room and dining room, adds privacy to the bed rooms and bath. A two flue chimney in the kitchen takes care of the furnace and kitchen range, and is also designed with incinerating chamber at the base, for the disposal of all garbage and waste.

A dormer is placed on the rear of the house, giving head room to the stairs which lead to the second floor containing two bed rooms. Size 30′ x 38′.



· · FIRST · FLOOR



· · SECOND · FLOOR · ·

WARM-AIR HEATING

MAN'S first reaction to fire was probably what that of the lower animal is today—when possible he avoided it. It is a far remove from that primitive reaction to fire to man's final conquest of this most destructive and, at the same time, most useful element. From fear to conquest was a long journey, and it represents four periods. (1) The period when man's chief effort with respect to fire expressed itself in his flight from the dangers of lightning and volcano. (2) The discovery of the elemental use of fire by accidental means. (3) The creation of fire at will. (4) The conquest of fire.

It is not difficult to understand primitive man's awe of fire. He had no explanation of its phenomena other than that the flash of lightning which ripped to splinters the giant trees about him and the belching volcano which shook the earth beneath him, must come from an all-powerful personage. Hence the primitive worship of fire.

Then there came a discovery. There were those with courage to approach the fire which had been kindled by this mysterious personage and they found it capable of giving warmth and comfort. Emboldened and encouraged by the discovery of this friendly contribution to his happiness some first man far back in the dim beginnings partook of the roasted flesh of some wild animal caught in the path of the burning forest, and found that fire had improved its edible qualities. This discovery of the possible blessings of fire led man to preserve it and keep it alive in a place where he could make use of it as occasion and his pleasure required. The Fire-God thus became not only a God of Vengeance to be feared, but a God of Beneficence to be worshipped, for by his fire man had comfort in the wintry storm and the steaming venison satisfied his hunger.

But sometimes the fires burned out. Man's inventive genius, now that fire had become a necessity, soon found a way to create it by the rubbing of sticks together, or by the striking together of flints. He no longer had to wait for a wrathful God, by lightning or eruption, to kindle his fire—he made his own.

There still remained the final step—man's conquest of fire. It had been his master. He now made it his servant. With its aid he melted and molded and forged the metals; he builded a steamship and a steam railway and shortened the circumference of the earth to a dimension not greater than the distance which separated the campfires of two neighboring chieftains of that remote day. The history of civilization is the history of fire. Put out the fires that glow beneath those steel monsters that today drive our factories, our steamships, and our great moguls of transportation and civilization itself would revert to its primitive state.

As there were four epochs in the history of fire, so there have been four epochs in the history of man's eternal warfare with King Winter. These epochs are characterized by the bonfire, the fireplace, the stove and the furnace. In each of us there is that primitive instinct for the fire in the open: for what soul is so unemotional that he does not blaze in unison with the flames of the campfire, glow with its living coals and fade with its embers? And even so with the old fireplace.

But when progress set up in the front room that unpoetic, that prosaic stove, that utility was speedily appreciated for what it was, a necessary inconvenience and an abominable nuisance, to be shined and polished and cleaned after and under, and carried out in the Spring and in in the Fall—when this abomination was given half of the front room popular prejudice soon put it where it belonged—out of sight in the basement. There it could offend neither the sense of sight, nor still more painfully, the unwary's sense of touch. Thus with this final evolution man had passed the three stages—the period of the outdoor bonfire, the period of the indoor bonfire, or the fireplace, and the abbreviated period of the stove.



During the first three periods there had been little immediate concern about matters of ventilation, humidity, economy and other items. Fuel was to be had for the gathering, and ventilation there was in plenty, and even more. But with the modern almost air-tight construction and with the vandal destruction of our forests there has come a change. The subject of ventilation is to be considered as vital to health as warmth is to comfort. And so with the matter of humidity. And the cost of fuel, which continues on the increase, has rendered it imperative that we obtain the maximum heat-

ing efficiency with the minimum consumption of fuel.

What are the factors that should be looked for in a heating plant? (1) Steady, comfortable heat in each room. (2) Perfect circulation of clean, pure, moist air. (3) Simplicity, convenience and economy in fuel. (4) Durability, economy and upkeep. Let us consider these items in their order.

A most desirable feature in any heating system, and an altogether essential feature is that of steady temperature and even distribution. These conditions are not met with in every home, and in the homes minus these conditions it is obvious that the conditions favor neither health nor comfort.

Because of an improperly placed furnace, improperly placed risers, improper pitch of risers, ill-proportioned risers or a furnace of insufficient capacity or a combination of these and other wrong calculations, or because of faulty construction or improper installation, or both, fluctuating temperature, uneven distribution, harsh, dry air, smoke and dust are not infrequently met with in homes where hot air is the medium. Then, too, there is sure to be dissatisfaction with the service and with the cost of upkeep. Unsteady temperature and uneven distribution invariably result in recurrent colds and allied ailments while the absence of proper humidity and the presence of dust and smoke invariably result in that dry, hacking cough so often observed in air-heated homes.

Perfect circulation of pure air constitutes proper ventilation. Perfect circulation can obtain only where risers and cold air shafts are scientifically constructed and installed. The air in the house will be pure in that proportion that care is exercised in preventing basement air from entering the circulating system and in admitting in a proper way the proper proportion of outside air. These are all matters concerning which lay judgment is not to be relied upon and the safest plan for the homebuilder who would use air as a heating medium is to consult only those whose integrity and technical judgment may safely be relied upon.



Simplicity of construction is a feature of every good heating system. The more complicated, the more likelihood of trouble. A good furnace to install in the home is one simple in construction and of a shape and size for convenience. Such a furnace will make for economy in upkeep and fuel as well as for economy in space.

There are many makes of heating plants in the market today—some good ones and many with reputations of a character that make it impossible for the company to repeat its imposition in the community where their product has had time to advertise them for what they are—impostors.

We repeat our precaution to the prospective homebuilder again and again, against relying on concerns whose reputations for integrity and service are not well established. As a rule the services of reputable concerns cost no more than the services of less well known manufacturers, even in initial outlay, and many times more often than otherwise a few months of worry and inconvenience and a stack of repair bills will amount into figures that can be set down only in the grief column of the loss and gain page of one's ledger. A little temporary grief in initial cost, where it is necessary is much to be preferred to the whole lot of grief that comes inevitably in the wake of a penny-wise and pound-foolish investment.



We know from actual observation and experience of certain reliable concerns whose products answer every requirement that can reasonably be made upon a heating plant, whose furnaces are engineering triumphs in simplicity, economy and efficiency, yet whose prices in actual first cost mean a saving to the purchaser.

During 1918 and 1919 the University of Illinois cooperated with The National Warm-air Heating and Ventilating Association to investigate:

(First) To determine the efficiency and capacity of commercial warm-air furnaces under conditions similar to those existing in actual installations with leaders, stacks and registers to form a complete system.

(Second) To determine satisfactory and simple methods of rating furnaces so that the proper size and type of furnace can be definitely selected for the service required.

(Third) To determine methods of increasing the efficiency and capacity of furnace heating equipment and the advantage or desirability of certain types of design.

(Fourth) To determine the heat losses in furnace heating systems and the value of insulating materials as affecting the economy of the furnace or the other leaders and stacks, and finally of the system as a whole.

(Fifth) To determine the proper sizes and proportions of leaders, stacks and registers supplying air to first, second and third floors.

(Sixth) To determine the friction losses in the cold air or re-circulating ducts and registers and their proper size, proportions and arrangement or location.

(Seventh) Eventually, to make a study and comparison of outside and inside air circulation, as affecting the economy and operating of furnace systems.

The results of these investigations are for the purpose of furnishing whatever scientific and technical data developed in this work for the benefit of the engineering profession, the warm-air furnace manufacturers and the homebuilder. It is impossible to furnish our members with the complete printed data regarding this investigation but our engineers have made a study of the results and their benefits are incorporated in the suggestions and complete heating layouts which is a part of our service.



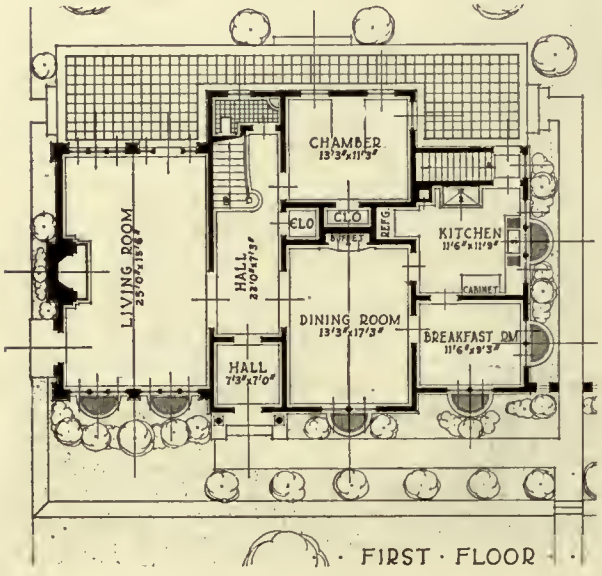
The Maywood

THIS attractive but unusual type of Colonial home is not wholly dependent upon its attractive background for its individuality and character. The attractive hood over the entrance, casement windows, wide siding and shutters have been used with perfect harmony.

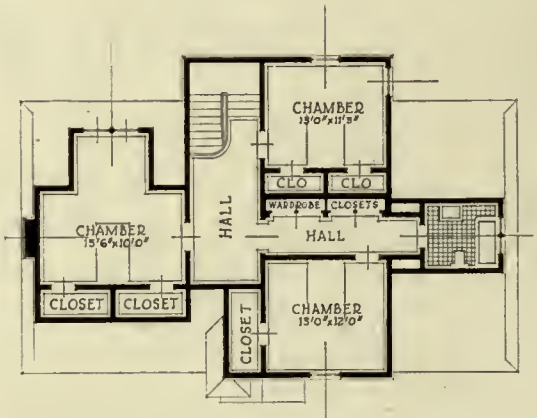
An unusually good interior arrangement is necessary to do justice to its exterior beauty. From the vestibule, which is sufficiently large for a wardrobe on each side, you enter a comfortable hall containing a Colonial staircase. The space underneath the stairs is used to good advantage as a lavatory.

The living-room is exceptional and has been so designed that you do not feel the absence of a porch. It has French doors opening onto the terrace and a step at the drive. Bed-room or den, kitchen and breakfast-room complete the first floor.

Three bed-rooms, bath and closets are well arranged on the second floor. This plan is 50′ wide and 36′ deep.



· · FIRST · FLOOR · ·



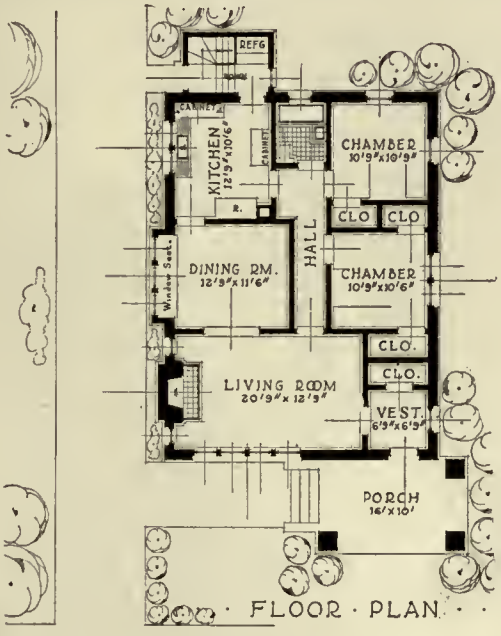
· · SECOND · FLOOR · ·

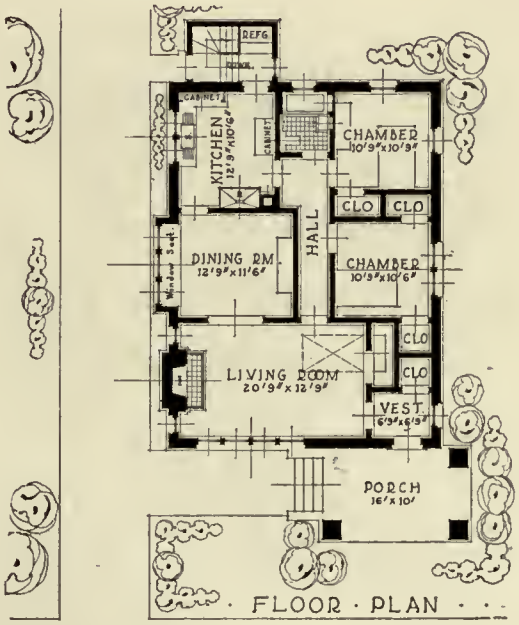


The Fayette

THE architecture of this home is both pleasing and substantial. It is suggestive of strength and beautiful effects are available in the different colors of face brick as described in the text in another part of this book.

The living-room is large, well proportioned and made light and cheerful by the grouped front windows which are of the casement type. It is entered through the vestibule which contains a cloak closet. The center hall leads to the bath and bed-rooms, which contain plenty of closet space. A choice of two floor plans is shown, plan "B" giving additional sleeping accommodations when desired by the use of a Murphy Bed. This involves very little additional cost. At the rear of the kitchen is a grade cellar entrance addition with a platform designed for a refrigerator. This bungalow is 34′ wide and 40′ deep, which does not include the front porch or rear addition.





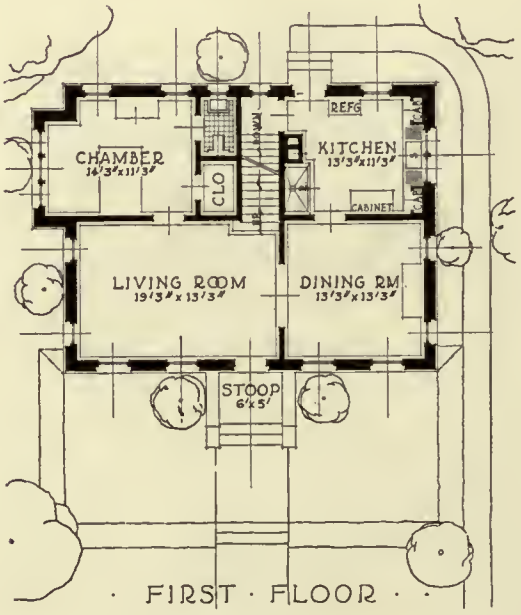


The Somerset

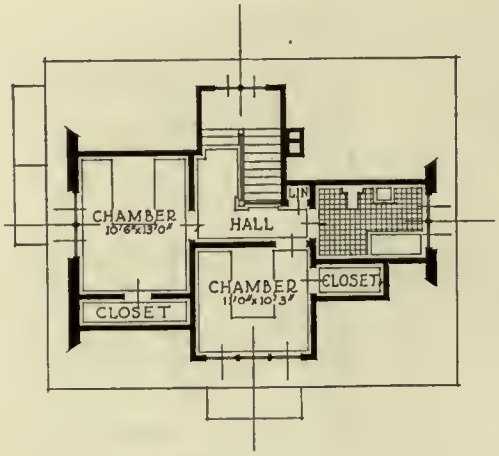
THERE is a sturdy, pleasing appearance to this face brick bungalow. Though its lines are simple and straight, its carefully studied designing places it at once in the class of artistic small homes.

The living-room and dining-room, connected by a pair of French doors, occupy the space across the front of the first floor. Directly off the living-room is a good sized bed-room with a closet and lavatory. The kitchen, which was designed for a step-saver, contains all the modern conveniences. The entrance to the cellar has been placed underneath the main stairs.

The second floor contains two bed-rooms with closets and especially large bath. This home is 35′ wide by 37′ deep which does not include the bay projection in the side of the first floor bed-room. Due to its compact arrangement this home would be very inexpensive to build.



· FIRST · FLOOR · ·



· · SECOND · FLOOR · ·

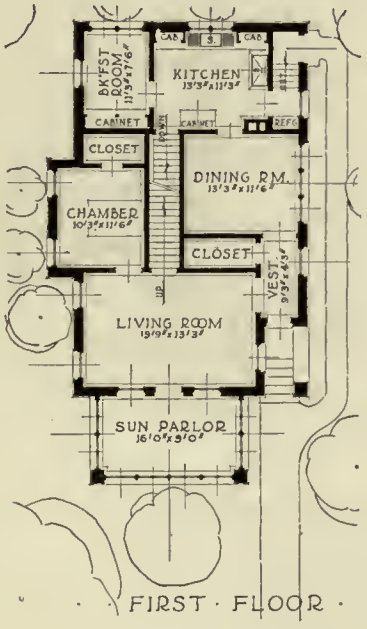


The Grossmere

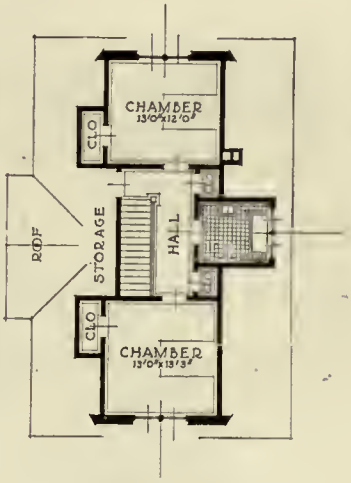
THIS substantial one and a half story face brick home is especially adapted to a narrow, deep lot. The entrance is well protected, being inset underneath the main roof at the side. This design is a good example of the possibilities of using face brick in the construction of small homes.

The first floor plan consists of a large living-room, dining-room, kitchen, bed-room and breakfast-room. The sun-parlor adds much to the attractiveness of this plan. Large closets are designed in connection with the vestibule and bed-room. The stairs to the second floor, which contains two bed-rooms and bath, enters from the living-room, and the space under the main stairs is used for inside cellar stairs.

If two bed-rooms on the second floor meet with your requirements, the one on the first floor may be converted into a comfortable den or library. This plan is 30′ wide and 53′ deep, which includes the sun-parlor.



FIRST · FLOOR



SECOND · FLOOR

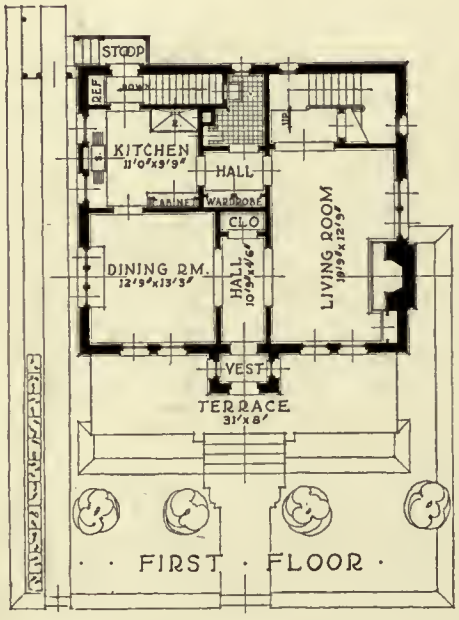


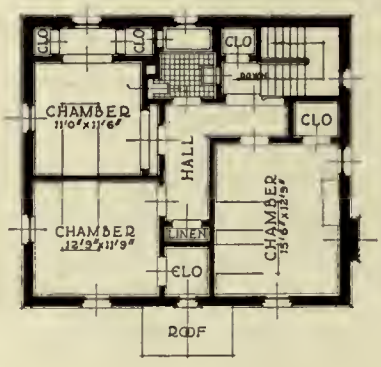
The Baldwin

An attractive brick design suitable for a suburban or city home. The hooded entrance and gabled dormers breaking the broad roof expanse and the wide projecting eaves give this home an expression of dignity.

Entry is made through a vestibule to a central hall, off of which is a convenient clothes-closet for outer wraps. Cased archways on either side of the hall lead to the living-room and dining-room. At the rear of the large living-room is a recess from which an attractive stairway leads to the second floor. In the hall separating the living-room from the kitchen is a wardrobe closet and lavatory.

The kitchen is well lighted and conveniently arranged to take all modern equipment. The entry at the rear is planned for outside and inside entrance to the basement, and has plenty of space for a good size refrigerator. The size of this home is 33′ wide by 29′ deep.



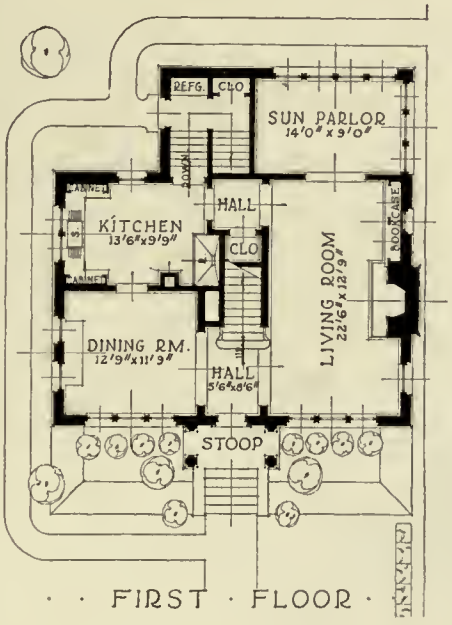




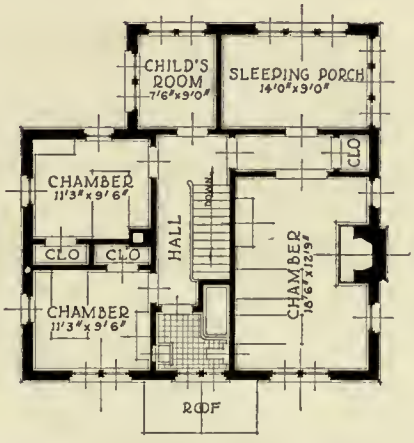
The Auburn

THERE are very pleasing and attractive lines to this brick Colonial design which give it an air of dignity and refinement. The front entrance, Colonial columns, pilasters and good window arrangement are features which tend to make it "out of the ordinary."

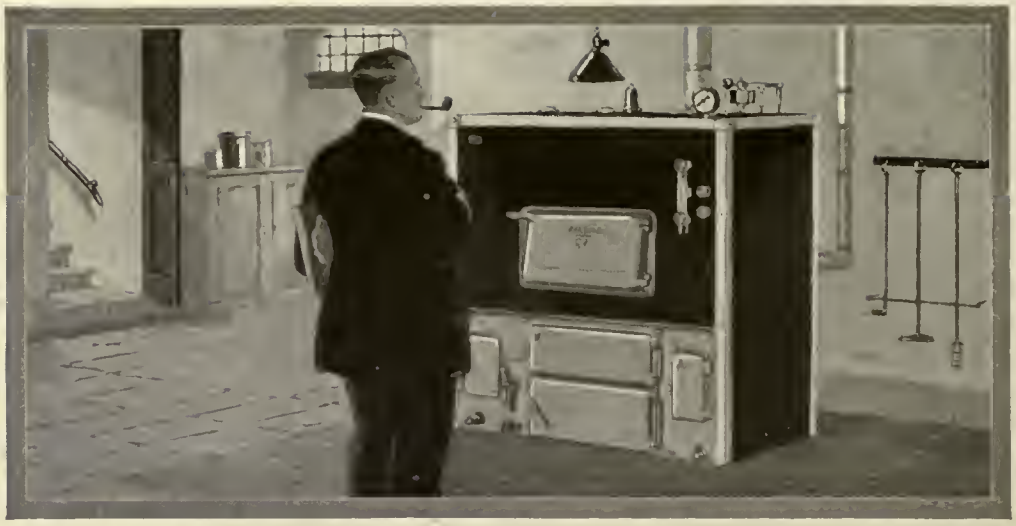
The arrangement of the floor space leaves nothing to be desired in this respect, every available foot of space being utilized to the very best advantage. On one side of the hall the living-room and sun-parlor are connected by a pair of French doors which gives them the appearance of one large room. The left side of the plan is devoted to dining-room, kitchen, and a combination grade and cellar entrance which also has a space for refrigerator. The second floor plan consists of three bed-rooms, bath, sleeping-porch and play-room. This home is 34′ wide and 34′ deep and with the proper selection of face brick is one which will not fail to create favorable comment.



· · FIRST · FLOOR · ·



· · SECOND · FLOOR · ·

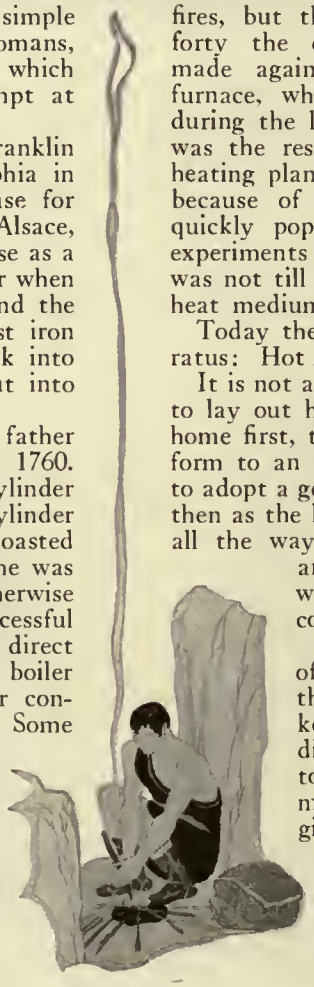


STEAM AND HOT WATER HEATING

A COMPLETE story of the history of the heating of the home would, in itself, run into a most interesting volume of several hundred pages. There was, first, the fire built outside the primitive home. Then there was the fire in the center of the rude tent or wigwam, whose smoke and gases found vent at the apex of that simple shelter. There were the braziers of the Romans, and the fireplace in Old Venice, a city which boasts the distinction of the first attempt at chimney building.

The next long step forward was the Franklin stove, which was first used in Philadelphia in 1744. There were so-called stoves in use for cooking purposes as far back as 1490 in Alsace, but the stove did not come into general use as a means of heating until three centuries later when Ben Franklin, who invented lightning and the Declaration of Independence, built a cast iron open heater one end of which stuck back into the flue while the business end stuck out into the room.

Ben's Quaker stove was the modest father of the cast iron box stove born about 1760. And this stove begot the sheet iron cylinder that made its advent about 1800. The cylinder was the father of the base burner that toasted the shins of Old Hickory Jackson while he was busy roasting the National Bank, and otherwise laying the groundwork for our first successful financial panic. The base burner was the direct forerunner of the present day furnace or boiler which modern economy and a desire for convenience has relegated to the basement. Some day in the not very distant future, some disciple of Thomas A. Edison is going to perfect an electric heater which will be practical and whose cost will be within easy reach of the man of moderate means. Another long step will then have been taken in advance. Will it be the final step? Who in these days of man-made miracles would dare make a guess?



With the development of the American city with its palatial homes, Yankee ingenuity was not long in solving the vexatious problem of heating. A stove in every room of a thirty or forty room house was not only expensive and intolerably inconvenient in the way of maintaining as many fires, but the system multiplied by thirty or forty the dangers of fire and accident, and made against space-economy. The hot air furnace, which came into pretty general use during the last half of the nineteenth century, was the result of a demand for a centralized heating plant in the homes of the wealthy, but because of its many economies its use was quickly popularized, and along with it, came experiments with steam and hot water, but it was not till late in the century that water as a heat medium found popular favor.

Today there are three types of heating apparatus: Hot Air, Steam and Hot Water.

It is not a good plan for the builder of a home to lay out his plans for the construction of his home first, then force his heating plant to conform to an arbitrary layout. It is much wiser to adopt a general plan of heating the home first, then as the layout evolves there is co-ordination all the way. Modifications of building plans and of the layout of the heating plant will result in a happy and economic compromise.

There are considerations in favor of each type of heating. Hot Air is the cheapest in initial cost and in upkeep. As to the item of fuel it is a different story. With Hot Water five tons of anthracite coal will give as much heating service as six tons will give with steam, or as seven and one-half tons will give with hot air.

As to the lasting qualities of the equipment required by the three types it may be said that the steam plant will outlast the hot air install-

ment by two to one, while the life of the hot-water plant is in proportion of three to one over air.

We do not propose here to enter into any detailed discussion of ways and methods of installation, of volumes, or placements or any of those items which involve technical skill for their application. These are all matters which, as we have repeatedly suggested elsewhere, are determined in the factories where heating equipment is made, and by competent heating engineers. They are matters concerning which the layman is not in a position to judge or determine. And in the individual layouts, plans and specifications, furnished the builder by the National Homebuilder's Society, we give the member of the organization full detailed instructions in all such matters.

We do propose, however, to set before the reader some of the advantages and disadvantages of the various types of heating apparatus and then leave him to decide for himself which type will best meet his requirements.

We have already mentioned the item of cost. When the books are balanced at the end of a period of years and every item of outlay, including the initial expenditure of installation, repairs, replacements, fuel, etc., in other words, when the item of economy spread out over a given time is considered, it is not likely that a great deal can be said in favor of any one of the three types to the disadvantage of any one of the others. The question, therefore, resolves itself to one of choice, based on the service rendered by each of the three types of heating.

The efficiency of steam heating apparatus is not affected by changes in weather conditions. This, of course, is not true of the gravity air system. Winds, low temperatures and humidity of the air, all of which, or any one of which, influences action of air in circulation, have no appreciable effect on the circulation of steam. Of course, we do not mean to say that the location of the room with respect to prevailing cold winds, or the amount of glazing, or the dimensions of exposed wall surfaces, are not to be considered. They are all determining factors in the amount of radiating surface required, but these proportions being accurately determined upon, weather changes, atmospheric conditions, and the like, will not affect the operation of the plant. And in such matters the contractor who attempts to make his installations by "rule of thumb" will bring grief to the homeowner.

An ideal boiler for the home is one that is compact, neat in appearance, and one which reduces heat-waste to the minimum. It has high heating efficiency and so makes for economy of operation. It is a boiler which will economically take any kind of fuel,—wood, soft coal, hard coal or coke. It is a boiler that is easy to fire, easy to shake and to keep clean. There are just such boilers, and, unfortunately, there are boilers whose distinguishing feature is the lack of every one of these qualities. The selection of a boiler is a matter of paramount importance and one which demands the most careful consideration on the part of the purchaser of a heating system.

The buyer, for example, may overlook the fact that there are boilers on the market in which the long travel of the gases emigrating from the heated coal affords practically a smoke-consuming device, and from which, except when the coal is first thrown in, smoke is never seen issuing through the flue. Where this condition prevails every last bit of heat in the coal is utilized to warm the home.

It is highly desirable in these days of uncertain deliveries of coal that the boiler you install in your home will burn economically any kind of fuel which is most conveniently obtainable. It often happens that it is impossible to obtain just the kind or size of coal you wish. You may live in a hard coal region and for some reason or other you are forced to change to soft coal. If you have considered this item and acted on it intelligently you can make the change, for the boiler you have purchased will burn one kind of coal with as high efficiency as the other. This means, too, that you may save money by using low-priced fuels.

In many communities smoke ordinances are in force. You may live in just such a community. If you do, the smoke-preventing device of the right kind of a boiler will meet every requirement of any such regulation and at the same time save you the high cost of hard coal. If you don't live in such a community, the chances are that sooner or later, your city dads will move up another peg in line of progress and leave you stranded unless you have wisely selected the part of your heating equipment.

The rightly constructed boiler always stands ready to intercept any heat from your coal which might attempt to escape up the chimney. In such a boiler, only enough heat gets by to create the necessary draft and all of the rest is absorbed and put to work warming your home.

The heat, as it is liberated from the coal, attempts to rush for the chimney. If the boiler is scientifically constructed this heat will be arrested in its flight, and set to the business for which you buy coal.

The boilers which perform these functions to best advantage are tubular in construction, and we do not hesitate to recommend the tubular boiler as the most economical boiler in the market toda



It involves a scientific principle that makes directly for economy and efficiency.

A boiler to be complete and to do its most efficient work, must have an automatic control attachment. Such an attachment makes not only for health and comfort, it makes for economy. With such an attachment one avoids extreme fluctuations in temperature which are the inevitable results of forgetfulness on the part of the attendant where regulation depends on personal rather than automatic, mechanical attention. Roast or freeze or, rather, roast and freeze, you will where the regulation of drafts depends on somebody who forgets—forgets to close the dampers till reminded by the smell of varnish, then forgets to open them 'till that shiver up his back calls him to the regulating chains, or worse still, to the furnace where he views the remains of the fire that was, and with blasphemy in his heart and cuss words in his mouth "sets to."



There are a good many makes of control devices to which there can be but one objection so far as we have been able to find out — namely — they don't control. They look formidable enough. In fact, most of them look sufficiently complicated to be highly efficient and serviceable, and they do add to the impression of the whole works, but as a rule the only quality they possess that would justify the suspicion that they are automatic is the fact that they automatically demand the presence of a tender to shift their gears when occasion requires a change of the drafts.

There are a few good controls. And a good control makes you forget that there is a furnace in your basement or that King Winter is madly knocking outside for entrance to your home. If the fire-pot of your boiler is of sufficient size, large and roomy, holding a goodly supply of coal, and your control is right, the supply of heat will be even and uniform, and your attentions to the boiler will be confined to a trip or two to your basement every twenty hours where your only function will be to shovel in the coal and shovel out the ashes. There is no constant chasing up and down the basement stairs to fix the drafts. That is done for you by the automatic control.

With such regulation the fire runs much more smoothly than if you attempted to control it by hand. This means coal economy for just the same reason that an automobile uses less gas on a straight smooth road than when in the traffic-laden, crowded streets of the downtown district. The constant starting and stopping of a car wastes gasoline—the constant turning on and off of the drafts, the frequent feeding of the boiler with little driblets of coal, is most wasteful.

In our recommendations to clients we have been and will be guided by our acquaintance with companies of and products of known standards—in most cases, in fact, by actual acquaintance with the concerns recommended and by actual experience with their products. In this way we hope to guide our clients away from hazardous experiments and expensive experiences. It is not improbable at all that long before this the reader has been reminded of the "Ideal Water Tube" Boilers manufactured by the American Radiator Company.

The Ideal Water Tube Boiler meets every demand we make upon a boiler for heating the home. Its installation, with the accessories we have already described, and others which we shall later discuss, is a guarantee of satisfactory service and economy.

The Ideal Water Tube Boiler, comes equipped with Steam Gauge, Water Column, Try Cocks, Firing Tools and Automatic Regulation. The Water Boiler is equipped with Regulator, Altitude Gauge, Hot Water Thermometer supplied at extra charge.

In smaller buildings and in cases where lower cost in equipment is necessary, The American Radiator Company has a very efficient and satisfactory substitute for the more pretentious plant with a large boiler in the basement—this is the Ideal Arcola Outfit. With their installation there is the maximum of installation economy and a surprisingly satisfactory service. It puts the full economy and the convenience of hot water heating within easy reach of owners of cellarless bungalows and small city and farm cottages. In its neat, compact and low-priced form, the Ideal-Arcola Boiler offers the solution of heating problems of a large number of home owners who either for financial reasons or because of the absence of basement facilities are forced to the less pretentious, but for that reason none the less efficient, heating plant.

The above type of boiler is not without its advantages over the basement type. It serves the double purpose, for one thing, of boiler and radiator, and, consequently, reduces the amount of waste heat to the minimum. It is mighty economical of operation and its small size and pleasing appearance permit of its being placed in any room having a chimney connection.

Even though one were building for the purpose of a renting investment, the Arcola will return paying dividends, for its installation saves the renter the cost of a less satisfactory heating device, the stove, and gives him the economy and comfort of hot water heat. Any tenant will be glad to pay a dollar and a half or two dollars more a month for a plant that heats, not in spots, but all over and with an even, uniform temperature. One dollar and a half a month extra in rent is a good investment for the builder and secures for him a better satisfied, longer-staying tenant. Such a plant under reasonable care will outlast the building itself.

The cellar is not a necessity; moreover, where there is Arcola installation, and this saving in excavation alone will equal the cost of this heating plant. We do not hesitate to say that no other feature of building equipment offers greater benefits and savings in the upkeep of the home; greater protection to the comfort and well being of the family or greater convenience in the way of converting a drudgery into a pleasure. It is a labor saver, and a real comforter.

The Arcola Boiler is constructed along lines which guarantee scientific conservation of fuel; is compact, attractive, and long-lived; has a large fuel space, making frequent coaling unnecessary; has vertical flues which are self-cleaning, and assure efficient operation; revolving grates which enable the operator to clear the firebox of ashes with ease; a waterbacked base which makes it easily accessible to fuel without spilling; sliding draft door, which makes for easy and perfect regulation of heat; an extensive exterior heating surface which makes of the boiler itself a heat-giving unit of sufficient capacity to heat a room of ordinary size; and it is unlike the stove, cleanly.

Another advantage of this system which we have not as yet touched upon is the fact that at any time the owner of the house decides upon the addition of one or more rooms, it is not necessary to tear up his plant and replace it with a larger one. Both boilers and radiators are made in sections and so constructed that any time an additional volume to the contents of the building requires additional heating power, other sections may be added to the boiler as required, or to a radiator if additional volume to a room is decided upon.

Popular belief has it that it is a difficult matter to get proper circulation of hot water where boiler and radiator are on a level, such as is the case in the one-story cellarless house. On the contrary, it is simply a matter of proper piping proportions and of the proper pitch of pipes necessary to facilitate the flow of water. The principle involved is simply that of gravity. The hotter water being lighter seeks the high spots in the system, which on cooling settles to the bottom of the radiators, gravitates toward the bottom of the boiler again where it is reheated and again rises and circulates toward the radiators. It is just this principle that makes a hot water method of heating the home the most efficient and economical known to science.

We have so far discussed only the Ideal Water Tube Boiler, for basement installment, and the Arcola Boiler for first floor-level installments. The Ideal Arco Steam Boiler is of the round type.

We have said before, and do not apologize for repeating here, that there are certain fundamental requirements which the purchaser of a heating plant has a right to make of a boiler: (1) It should be simple and easy to operate; (2) It should furnish ample heat to radiators in the rooms with the least possible consumption of fuel; (3) It should go through every winter without repairs and come through as good as new in the spring. The reader is likely to say that our third requirement is at once broad and severe. We admit that it is, but are we too severe when there are boilers in thousands of American homes today that have met the conditions imposed by our third requirement—have been doing it for years. And we offer no apology for giving our clients the benefits of our observations. They have a right to demand of any heating plant they install in their homes all that the best has to offer, and the best offers efficient service through a long period of years without repair and expense in upkeep, and at a cost very little in advance, or not at all in advance of inferior products.

One of the objects of the present volume is to steer the prospective homebuilder away from inferior products and inferior workmanship. As a rule the quality products of manufacturing concerns of well established and enviable reputation cost no more than those less scrupulous, or of those not so well equipped. And it is not a whit less true that unskilled workers who are put at jobs for which they are wholly unqualified are neither scrupulous in their charges nor conscientious in point of workmanship—a bad combination is that, an incompetent, dishonest workman without pride or ambition. Manufacturers of integrity and expert workmen of skill and pride guarantee large dividends on the homebuilder's dollar.

What any houseowner desires most in a boiler is good heating results with the least coal waste and attention and with no repair bills. When a heating boiler accomplishes such results with fairly sensible management, average fuel and chimney draft, it fulfills its objects, and satisfaction continues season after season.

The right kind of a boiler gives this kind of satisfaction. The reasons are simple and easy to understand. Such a boiler there is somewhere in your



own neighborhood and its reputation for reliable heating efficiency, fuel economy and long durability has been established by experience had with it in thousands of American homes. It is not an experiment—it is a proved success—and in the words of our old colored friend who had deserted his own watermelon vineyard to make sad ravages on that of his neighbor and had been caught red-handed and was advised to stay on his own ground, "Wos de use in sperimentin?" The old darkey's business judgment was good, if not his morals. He would shun the patch he hadn't tried for that which experience taught him was a sure bet.

In the selection of a boiler it is well for the purchaser to give some thought to the reputation of the boiler he decides upon. The reputation of so vital an item in the house as that of the heating plant is invariably a safe criterion. Buy what is reputed to be the best and you will make no mistake. The reputation of Ideal Boilers is too well established to need support in the present text. They have been tried and found true; they have been weighed in the balance of experience and not found wanting.

So much for boilers. The heat starts with the boiler and ends with the radiator. What are the requirements we have a right to demand of the radiator? The main points of value are right connections of sections, free circulation, correctly formed heat-radiating surfaces, smooth areas for decorating, a wide range of shapes and artistic styles.

The American Radiator is one that meets every one of these demands. There is not a place in the house where one could wish to locate a radiator, for which the American Radiator Company does not have a radiator of appropriate size, shape and design. There is the Peerless Curve Window Radiator, The Peerless Corner Radiator, The Peerless Window Radiator, The Peerless Pantry Radiator for plate warming, The Peerless Wall Radiator, and so on, ad infinitum. And each type is of highly artistic design and made with especial care to "go where" and "do what."

We do not here enter into a discussion of the technical question pertaining to the problem of heating, such as area required, B.T.U.'s, the principles involved in economical combustion and those things concerning which the layman is not well informed and in which he has little or no interest. His chief interest lies in the direction of efficiency, durability and economy spread out over years of satisfactory service. The technical details will be properly cared for and looked after in the proper place at the proper time by the proper people—and in this case the proper people are those who know well how to do the job and want to do it well. If left to them there will be no weeping and wailing and gnashing of teeth hereafter. They'll do it right and at a reasonable cost.

A little device which doesn't look like much, but which is as constantly vigilant in the performance of its duties and as jealous of its reputation as the automatic control which we have already discussed, is the Ideal Air Siphon Valve attached to each radiator.

Air must be vented from radiators and piping before the steam can enter. How may this be done without the attention of someone to see to it? Will the radiator not have to be opened by hand till it fills with steam, then closed again by hand to prevent the escape of the heat medium? No, not exactly.

This little doodad, the siphon valve, will not thank you for meddling with its affairs. It will empty the pockets of air, and when the steam rushes toward it, it will very deliberately shut its little gate and prevent its escape. But the moment a pocket of air again forms just that moment will the valve open. In this way the radiator is kept hot to the last inch of the last section. This makes for economy in the efficient use of heat, which would otherwise waste through the flue or by radiation from the boiler into the basement, for the even temperature of the home, and, so, for comfort and health.

We might add here that this device can be easily attached to any steam radiator. It puts new life in old jobs by properly venting the radiators and mains. It will work on any radiator and it works where other devices of its type fail. When a radiator does not heat it is not the fault of the radiator nor still that of the boiler. It is due primarily to the fact that steam and air will not mix. Which is another way of saying what some ancient celebrity once solemnly and profoundly proclaimed that "Two bodies cannot occupy the same space at one and the same time." It is the function of this little jigger to let out one of the bodies, the unserviceable one, and to let in the other. When the radiator refuses to heat to the last section it is because the little air valve on the outer section has sulked and refused to let out the air. No matter how hard you force the boiler or how much coal you burn or how high the pressure, it is impossible to drive the steam into the space filled by this pocketed air.

The designing of a valve that will operate correctly looks easy, but the conditions of use, such as the presence of water and dirt in the radiator, varying steam pressures and meddlesome tenants and curious children, grown and ungrown, complicate the problem. The "Ideal Airid" meets successfully all conditions and overcomes all handicaps. This inexpensive little device attached to every radiator in the home will save itself in a week of cold weather. But that is not all. A valve that has moody spells is like a balky horse. It stays put till it gets good and ready to go, which is always a whole lot longer than you want to wait for it. Then when it gets ready to go it becomes so overzealous that it keeps right on going, spitting, sputtering and filling the room with steam. This cannot happen with the Ideal Airid, for it is equipped with a siphon or drain tube which instantly drains the water out of the valve, leaving it free and open to rid the radiator of air. This action is certain and eliminates all leakage and sputtering, as well as the damage which is likely to result to furnishings and wall paper from the escaping steam.

This valve is an interesting piece of apparatus, but its operation and the principle underlying it are simple. A small amount of volatile liquid is contained within a float, which expands into a gas on being heated. The pressure thus effected raises the float and closes the valve. When, for any

reason, the steam recedes from the last section, the float cools and the gas once more resolves to its liquid state, relieving the upward pressure and allowing the valve once more to open, whereupon the operation is repeated. Such a device never allows the radiator to cool, and is a guarantee of the highest efficiency of the heating plant which means both satisfaction and comfort. The slogan of this unpretentious little fellow is, "Keep your steam radiators hot and save fuel."

It just works, and the more you leave it alone the better it works. It is particularly fond of adverse conditions. Varying steam pressure, flooded radiators, forced firing of the boiler and other unfavorable conditions so frequently encountered are readily overcome. In fact, such conditions are its long suit. It is the little sentinel standing at a strategic point to see that everything works. It never forgets, never neglects and never gets out of order.

One of the frequent causes of trouble right here is the clogging and sticking of the valve. This does not happen with the Ideal Airid Siphon Valve. The wide areas and absence of a pin pocket have reduced to a minimum the opportunity for dirt to interfere with the work of the valve. It is washed down and out through the free area around the float, and thus another prime cause for air valve failure is eliminated.

We made the statement in another place that the furnace or boiler is the heat of the home. While we are not willing to admit that there is any good place for unsatisfactory material for any equipment that is other than first class, or for any inferior order of workmanship, there are a few items that enter into the construction of a home that will not admit, without danger of positive disaster. And without the certainty of unnecessary expense in upkeep and great vexation of spirit, anything short of the best obtainable. Among the few items which imperatively demand the best in material, the best in manufacture and the best in workmanship are the heating equipment and the plumbing fixtures.

We believe it was James Russell Lowell who said of bad work,

"Bad Work 'll foller ye, ez long ez ye liv,—
Ye can't get rid of it, fer ez sure ez sin,
It's allus axin' to be done agin."

Whoever lived with a bad plumbing job for a year or two who wouldn't encore that well-put sentiment of the great poet? Whoever woke up in the "wee sma' hours" of a twenty degree below zero night to the hissing and sputtering of a broken steam pipe or the sound of his own voice as he sprang from his warm bed, half awake, half dreaming—

"Trickle, trickle, little break,
Tell me where, for goodness sake!
I'll be ——! What the ——, Swash!
The tank is busted sure, by gosh!"

And did the coil in your furnace ever go out on you on a moderate day? On a day when you could possibly heat the house to within sight of freezing with a roaring fire in the grate? And did you know that ninety per cent of all your troubles and all your neighbor's troubles with the plumbing and heating in the home could be traced directly to one of two fundamental causes—irresponsible manufacturers and poor installation?

Yes, bad work in the factory will follow any heating job or any plumbing job as long as that job lives. And so will bad workmanship in the installation of the best job ever put up in any factory follow a plumbing or a heating job to the end of its days. The only way to make such a job satisfactory is to throw it through the window, junk it, then employ men who understand their business to install a first-class plant that is going to be the cheapest because it represents the best in manufacture and installation. Any other combination will always be doing just what Lowell says, "axin to be done agin."

The good reputation of the manufacturer is one-half of the homebuilder's guarantee of all around satisfaction. That much being guaranteed by the decision to use only such equipment in the heating plant of his home as has this guarantee, the builder can ill afford to take any chances of spoiling a good job well begun by allowing friendship or personal consideration of any kind to enter into his program. It is a serious business, this of building a home, for it is going to make or mar your peace of mind, in the majority of cases, for the rest of your life. It is, then, business, strictly business, and the homebuilder is not wise who allows any extraneous issue to determine his choice of equipment and materials into—what? A house, or a home? Which? Your decision will determine that question one way or the other.

We endorse any product manufactured by the American Radiator Company as "Quality-Stuff," reliably backed, risk-proof, and reasonable in cost. Their boilers are as durable and efficient as are made and the prices compare favorably with those of companies less well known and well established.

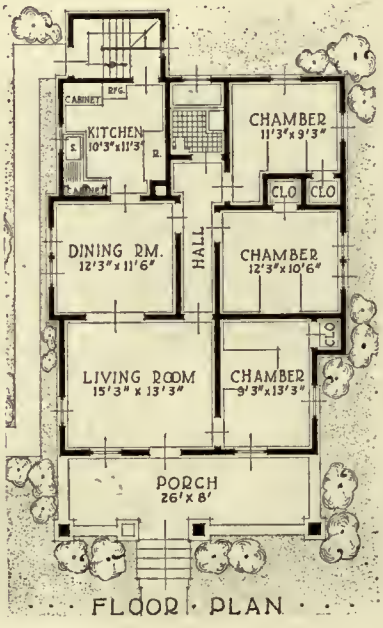




The Huron

THE home pictured here would be a welcome addition to any neighborhood. It is of a type which lacks the usual fussiness of the typical bungalow. The cosiness and comfort of the deep porch, which is set under the main roof, can be emphasized by the correct use of flower boxes and shrubbery. This plan is 29′ wide and 38′ deep.

The interior arrangement provides for a nice sized living-room, dining-room and kitchen, with a grade entrance on the left side of the plan, and on the other side are three comfortable bed-rooms with closets. The hall, which separates the two rear bed-rooms and bath from the main part of the house, can be entered from either the living-room or dining-room. Plenty of light and ventilation is found in each room. From the viewpoint of design and convenience, this home offers many advantages.



FLOOR PLAN





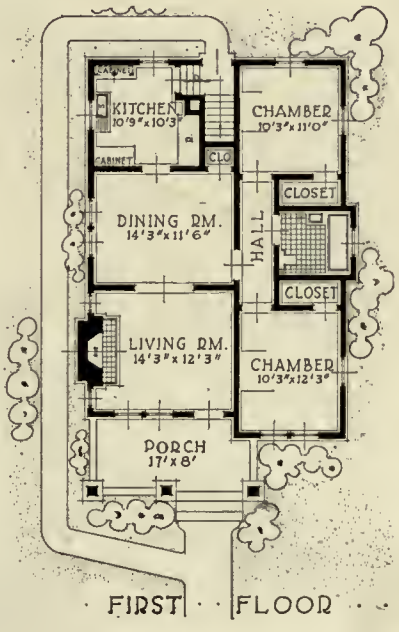
The Cortland

A TRULY attractive home with its cosy porch and broken roof lines. Wide eaves with supporting brackets add to the charm of this home which will appeal to those who desire a home of the bungalow type. The porch with solid built-up rail provides for privacy and offers comfortable shelter for hot summer days.

In the arrangement of rooms careful thought has been given resulting in convenience and ease of upkeep. Two comfortable bed-rooms each with cross ventilation, two large closets and bath are separated from the balance of the plan by a narrow hall.

The living-room, dining-room and kitchen are all well-proportioned to a home of this size, having good wall space and being well lighted. The kitchen opens onto a grade platform which leads to the basement. This bungalow is suitable for a narrow lot, being 26′ wide and 38′ deep, not including the porch projection on the front.





HOT WATER IN THE HOME



FROM the ancient method of heating water by dropping hot stones into a vessel filled from a near-by stream, a method still in vogue among primitive peoples, to a modern instantaneous heater is a development which fairly well shows the two extremes of the range of human ingenuity and achievement. Hot water throughout the house, at every tap from laundry to kitchen, instantly ready and as hot as you want it, is a luxury to which we moderns who enjoy it have become so accustomed that we do not always appreciate its advantages.

Those who still employ the old method of heating water over the stove in kettles or pans, and then carrying it laboriously to the place where we want it cannot realize by the mere exercise of imagination what the installation of a hot water system means to the home and to family life.

Think of it! Hot water in every tap—plenty of it—plenty hot—flowing out at the turn of the faucet; enough for a bath at any time—enough for a whole family's baths! Piping hot in the morning for Dad to shave—hot when the laundress comes—hot when the dishes are ready to be washed—hot at midnight if it is suddenly called for in the emergency of sickness in the family.

We urgently recommend the installation of some type of good hot water heater in every home. We design and provide for all the details in our plans for such installation. A little extra cost is more than made up for by the added convenience, and in cases where economy demands a choice between this and almost any other domestic equipment looking for comfort, we recommend that the hot water heater be retained.

Improvements, in the last few years, have brought a number of makes, and a number of types by each manufacturer, which are designed to give a supply of hot water at short notice throughout the house. There are many items to be considered in connection with these various devices. First, perhaps, it is the question of the speed with which a supply of hot water can be obtained. Some heaters are smaller than others. Next in importance, if not equal to it, is the question of the temperature of the hot water as it comes from the faucet. The question of quantity is entirely one of the size of equipment to be installed.



Just as essential, though not as obvious, is the question of safety. The possibility of an explosion must be absolutely eliminated and is, in every make so far as we know. The problem of preventing noxious fumes has been pretty generally solved. The possibility of fire is carefully guarded against, both in the construction and the installation of the modern heater.

Economy is a very important feature. As is most frequently the case, ultimate economy over a stretch of years or even months is effected by spending a little more on the equipment in the first place. It is perfectly clear that the less gas it takes to heat the required amount of water to the required temperature, the less expensive the operation of the heater will be. This is something that is determined by the contrivance of burner and water coils. The better the device is in this respect, the more it will be likely to cost, although it does not necessarily follow that the most expensive installations are the cheapest to operate or that the cheapest to install are the most expensive in the long run.

Heaters are made in three general types; the one in which the burner has to be lighted by hand and with which it is necessary to wait until the water circulates through the copper coils and returns to the range boiler used for storage; the second type is known as "instantaneous," the gas in this type being turned on and lighted from a pilot by the action of the water when the faucets are opened and closed; the third is the automatic storage system. With this type the gas burns until the tank water has been heated to a predetermined temperature. When this point has been reached the thermostat valve automatically closes the gas supply and the system is then idle until another drop in temperature occurs. There are a number of different types, some of them very good. In almost all cases complete safety is achieved under all conditions. Some are a little disappointing in dependability; and there is quite a wide range in the time it takes for the water to run hot, on the heat it attains, and in the amount of gas required.

This question of the selection of the best hot water heater is one to which we have given most careful attention and with our experience we have come to recognize the Ruud of whatever type as one of the most satisfactory when all considerations are weighed and balanced up. It is the heater we recommend and specify unless the owner has reasons of his own for desiring another.

Ruud heaters are very quick in results. The tank water heater which is the type in which the burner is lighted by hand is manufactured in a number of different sizes according to your requirements; they are designed to be used in connection

with tanks of from 24 to 80 gallon capacity and require a minimum of gas consumption. They are designed to give maximum circulation and have a quick heating feature in the form of coils wound in the reversed grade.

This method of supplying hot water is usually so installed that the range boiler and gas heater are located near the furnace so that during the time the furnace is in use, by the installation of a water-back or pipe coils, a part of the water necessary is heated from this source. The supply obtained in this way is necessarily limited during the intermediate seasons of the year,—late Spring and early Fall—when the furnace is not being used to its full capacity.

Instantaneous Heaters

This system was invented to eliminate the inconvenience of lighting the water heater by hand and of waiting ten or fifteen minutes in order to have the water in the tank heated to the required temperature. In the instantaneous system a pilot light is kept burning constantly. The opening of the hot water faucet in any part of the house automatically turns on the gas supplying a battery of powerful burners which concentrates intense heat on the copper coils full of flowing water. When the faucet is closed the supply of gas to the burners is cut off and only the pilot light is left burning. By this system the quantity of water actually used is all that is heated. Ruud Automatic Water Heaters are simple and efficient. By scientific distribution of coil arrangement the largest number of heat units are utilized. While a large amount of coil is used, it is so placed as to give the heat ample opportunity to reach and concentrate on every inch of coil surface, thus assuring you of hot water instantly. With the thermostat attachment the temperature of the water is regulated regardless of the amount withdrawn.



If two faucets are opened at the same time, the thermostat will admit a sufficient quantity of gas to properly heat the extra amount of water being drawn and when one faucet is closed the gas will be lowered accordingly. This attachment assures safety as well as economy.

Ruud Instantaneous Automatic Water Heaters are manufactured in seven sizes which will create a supply of hot water ranging from 1½ to 8 gallons per minute and will take care of the requirements of a small cottage, bungalow or apartment up to large residences where there are three or more bath-rooms. A very satisfactory size for the average home which requires hot water in the kitchen, bathroom and laundry is one that will furnish from 3 to 4 gallons per minute. Although the first cost of an instantaneous hot water system may appear fairly high, its use is not extravagant and it will leave little to be desired as far as efficiency is concerned.





Automatic Domestic Storage Systems

This system is designed to meet the requirements of home owners who desire a highly efficient hot water service at a low first cost and minimum operation expense. These heaters are manufactured and used in connection with 20, 40 and 66 gallon tanks. These tanks are constructed of extra heavy, galvanized and copper brazed material with a galvanized outer jacket and are insulated with granulated cork.

The granulated cork prevents the circulation of air and direct conduction which are two great causes of heat loss. So efficient is the insulation that if the tank is filled with hot water it will show no appreciable loss of heat over a period ranging from 8 to 15 hours.



An important point to be considered when selecting your hot water heater is its economy. The pilot light on Ruud heaters, which is used in connection with the instantaneous and automatic domestic storage systems and which lights the burner when the faucet is turned on is surprisingly sparing in its use of gas, the amount being scarcely appreciable on the month's bill.

The copper coils, through which the water flows and is heated, are arranged to receive the maximum heat from the burners. In fact, economy is achieved in all types of Ruud heaters by a nice adjustment of the flow of gas to the requirements and a complete utilization of the heat, none of which escapes without doing its full quota of work on the water within the copper coils over which the heat passes.

Ruud heaters can be installed by any plumber or gas company. Unless you understand thoroughly the hot water system which is being offered you for your money, we advise that you play safe and make sure with the Ruud.



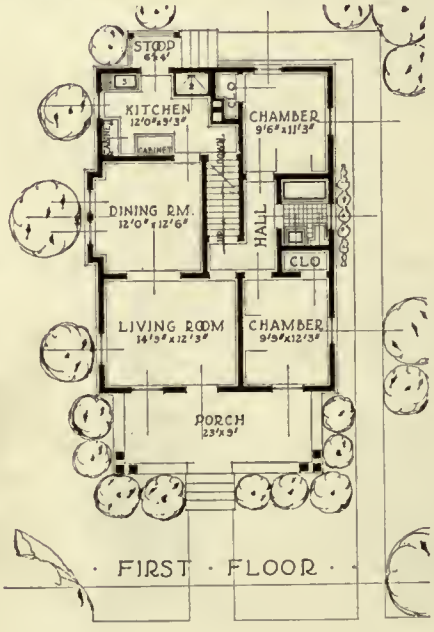
The Castleford

Who would not be satisfied with the exterior simplicity of this bungalow? The straight roof lines with supporting brackets in the gable ends and cosy porch with grouped columns give a pleasing effect which will appeal to those interested in a well arranged small design.

From the large front porch you enter a well arranged living-room which connects the dining-room by an opening equipped with a pair of French doors. A large kitchen with door entering to inside cellar stairs complete the left side of the plan.

From the living-room you enter a small hall which separates the two bed-rooms and bath from the rest of the house. Entrance to the stairs leading to the attic, with good storage space, also open from the hall.

The basement should be excavated under the entire house to contain heating plant, fuel bin, fruit room and laundry. The size of this home is 26′0″ by 36′0″ exclusive of the front porch which is 23′ by 9′. It can be conveniently arranged on a narrow city lot.





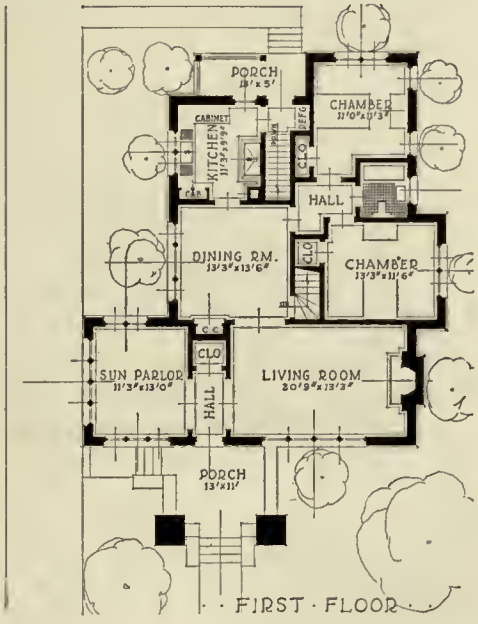


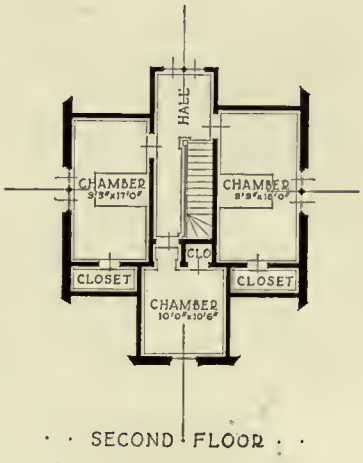
The Hancock

THE very simplicity of this attractive bungalow has a strong appeal to good taste. The front porch, though small, is comfortable and gives the required protection to the front entrance. The front hall separates the living-room and sun-parlor and contains a good clothes closet.

From the living-room one enters a well planned dining-room with space in back of hall closet used as a built-in china closet. The complete arrangement of the kitchen and rear entry will be appreciated. Two bed-rooms, bath and closets open off the hall, which enters from the dining-room.

Stairs to the second floor open out of the dining-room, where three bed-rooms with closets are planned. This bungalow is 29′ wide exclusive of the bay-window and sun-parlor projections and 42′ deep. The builder who builds a brick home saves on up-keep and fuel and will be better satisfied.







The Michigan

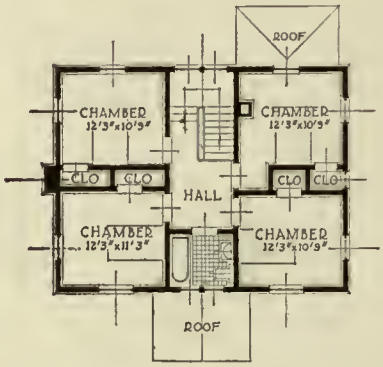
THOROUGHLY American in design is this home with lower exterior walls of wide siding stained brown and second story of stucco. The molded wood sill on a line with the second story windows serves as a break between the two materials.

Upon approaching the entrance you are attracted by the design of the front door and side lights and also the stoop, which gives the necessary protection. The hall contains a good sized wardrobe for outer wraps and is connected with the living-room and dining-room by French doors. The stairway to the second floor is inset off the living-room, giving added privacy. The kitchen is well proportioned, and contains all the necessary conveniences. The addition at the rear adds a very attractive dining-alcove and grade entrance. Cellar stairs and refrigerator occupy the space underneath the main stairs.

The second floor plan contains four chambers and bath. The outside dimensions of The Michigan are 34′ wide by 26′ deep, and if you desire a house which will wear well you will find this a very practical one.



· · FIRST · FLOOR · ·



· · SECOND · FLOOR · ·

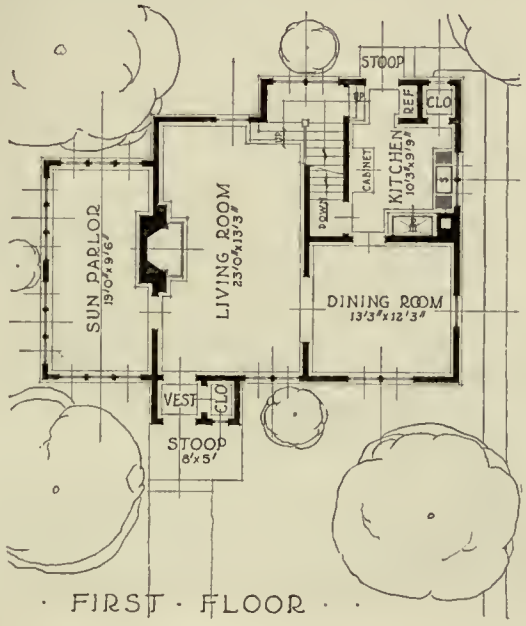


The Arlington

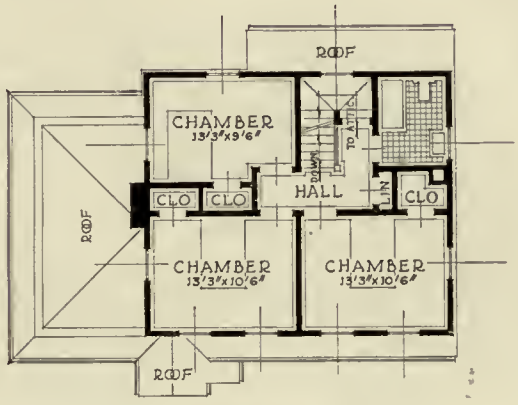
A CERTAIN fascination surrounds this type of wide-siding Colonial home with attractive entrance and good window arrangement. The projection at the front forming a vestibule and clothes closet is out of the ordinary and breaks up the front wall.

The rooms are very well planned on both floors, the first floor containing a living room, dining room, kitchen and a large sun parlor opening off the living room. The main stair open from the living room and is also accessible to the kitchen through a door on the platform. The space underneath the main stairs is used for the cellar entrance. A convenient place for a refrigerator and storage closet off the kitchen adds to the efficiency of this part of the home.

Three bed rooms with closets, bath and linen closet opens off the hall on the second floor. Stairs also open from the hall and lead to a good sized attic for storage. The size of this design is 38′-0″ wide by 28′ 0″ deep.



· FIRST · FLOOR · ·



SECOND · FLOOR · ·

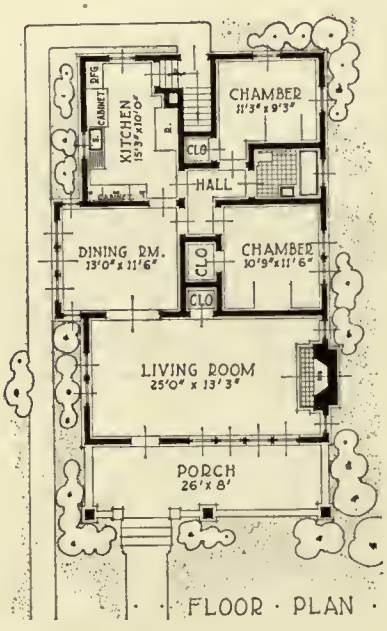


The Vernon

This home is unusually good looking, being a very good bungalow design. Constructed close to the ground, with wood shingled side walls and wide eave projections with bracket supports in the gables, it carries out the true bungalow spirit. It is 26′0″ wide and 42′0″ deep with 26′ x 8′ front porch and is well suited to a narrow city lot.

The living-room contains cosy fireplace extended across the entire front of the plan with windows on three sides resulting in a bright cheerful room. The dining-room is increased in size by the bay-window projection with attractive window arrangement. The kitchen is of good size and opens onto a stairs leading to grade platform and cellar.

Two well lighted bed-rooms and bath are designed off the hall, which gives them the necessary privacy. Each bed-room has a closet, and another closet for outer wraps, opens off the living-room.



FLOOR · PLAN





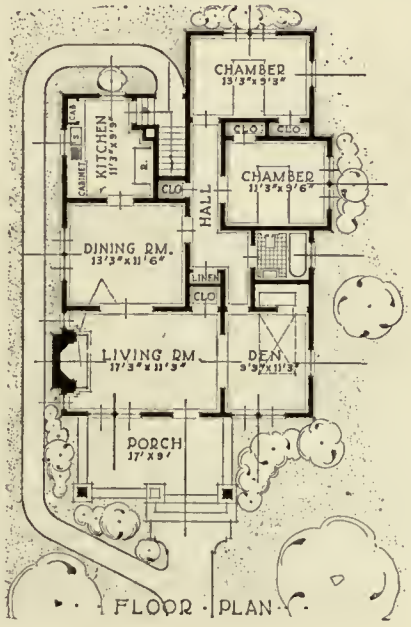
The Andover

THE most interesting subject in the man or woman's mind is that of owning a home. There is a strong inducement in everyone's nature which, sooner or later, expresses itself in the desire to own a place called "Home." To the home-builders interested in building a six room home, The Andover, offers many advantages for it has been designed to give real comfort and convenience at a low construction cost.

Though built along simple lines, it still fascinates and holds the eye of the prospective builder because of the cosy front porch and well balanced roof lines. This plan is 28′ 0″ wide and 43′ 0″ long with a 17′ x 9′ front porch making the total depth 52′. A lot with a 50′ frontage will be best suited for this design.

Careful study of the interior will reveal a practical arrangement of rooms which are all comfortable in size. An attractive front door leads from the porch to a large living room with a brick fire place at one end, on each side of which there are casement windows placed high enough from the floor to allow the wall space to be used for book cases or other furniture. A small closet is designed in this room which is convenient for outer wraps. French doors are planned to be used in the openings between dining room, den and living room, but these openings can be increased in width for cased or pedestal arches if preferred. The dining room is comfortable in size and is well lighted with mullion windows. The kitchen, though small, is complete and opens to stairs which lead to grade landing and cellar. Heating plant, fuel room, laundry and fruit room are well arranged in the basement which is planned to be excavated under the entire house.

A linen closet and closet for extra storage are designed in the hall which opens off the dining room and separates the sleeping rooms and bath from the rest of the plan. The room which is marked den has been designed with a Murphy Door Bed in the closet so it can be used for a third bed room if necessary. This is a space saving feature which will be appreciated by every owner of a small home. Owing to the many designs and finishes obtainable a selection can be made that will harmonize with the other furnishings of the room. The two bed rooms are well lighted and contain good closets.



FLOOR PLAN

"This is the true nature of home: It is the place of peace, the shelter not only from all injuries, but from all terror, doubt, and division. In so far as it is not, this is not home." —JOHN RUSKIN

FLOORING
MAPLE-BEECH-BIRCH



IN deciding on the character of the flooring to be installed in a house, it is necessary to consider the requirements made by service, appearance, and economy. And let it be repeated again and again that economy, as we use the term, involves both initial expense and upkeep.

There are three essential requirements to be considered in the installation of a floor—appearance, service, economy. It is not necessary to explain what we mean by appearance, more than to state that the floor should harmonize with the general scheme of things.

As to service, a word more may be said. A serviceable flooring is not only a flooring that stands hard wear, takes a good polish and holds it, and does not splinter,—it is a flooring that is easily cleaned, and easily kept in condition.

As to economy, the rule, "The best is the cheapest," applies here with the same force and fidelity that it applies with other commodities upon which usage makes hard and harsh demands, for nothing that enters into the construction of a house is subjected to a severer test of usage than the floor.

In the matter of cost there are two items to consider—the first cost, and the upkeep. Compared to the cost of the rest of the house, the floor is not a very considerable item in any case; the cost of laying hardwood is practically the same as that of laying softwood. The only difference between the use of Maple, Beech or Birch flooring and that of softwood, is the difference in the cost of material. And this difference is not great.

But when the item of upkeep is considered, Maple, Beech and Birch floorings are more economical than softwood. A softwood must be covered with a carpet, and a quality carpet will cost as much or more than a hardwood floor. If carpet is not used, a softwood floor must be painted and paint can never be made as attractive as varnish or wax on hardwood. Then there is the added expense of frequent renewals, of carpets or paint, which is a considerable item.

As to cleanliness: All dust and dirt in a room settles to the floor. It requires but little time to wipe the smooth, hard surface of Maple, Beech or Birch flooring with a cloth or an oil mop. But a carpet has to be laboriously swept daily, and periodically sent to the cleaner. All this involves the frequent taking up and tacking down of the carpets not less than twice a year at least.

It is hardly necessary to remind the homebuilder that it is next to impossible to interest a buyer in a house floored with softwood. A hardwood floor enhances the possibility of a quick purchase, of a quick sale as well as the resale value of a home.

Maple, Beech and Birch have several characteristics which distinguish them from other hardwoods used for flooring. They are absolutely free from slivers or splinters, even though bare and unfinished. They naturally take a beautiful and lustrous polish, and they have an unusually close, tight graining.

Yet these three flooring woods, which are so similar in smoothness, hardness, and cleanliness, offer a wide difference in color possibilities, so that one can get, from one of the three, practically any color or shade of color which the decorative scheme of his home requires.

Maple is the lightest of the three in color. It is so exceedingly close-grained that it is not advisable to attempt to stain it. But its natural color, when waxed or varnished, is beautiful and cheerful—a rich golden hue. There are possibly many of our readers who have seen Maple used in the home only in the kitchen, where it is frequently scrubbed and becomes almost white. To those who have not seen it used elsewhere, the thought that it can be so attractive will come as a pleasant surprise. But if one remembers that most ball-room floors are Maple he will know how it appears "in its party clothes."

This flooring wood is tough, hard, heavy, strong, durable, and never shells or splinters from ordinary use. It has a breakage strength almost equal to hickory. It is known by experts to have from two to three times the endurance, under hard usage, possessed by other woods used for flooring, with the possible exception of Beech and Birch, which are so closely related to Maple.

When one wishes a richer, natural color, or the colors which he can get by the use of staining, he should use Beech or Birch. Each of these flooring woods has a more pronounced graining, than Maple, and both will readily take and retain a fine stain and finish.

Beech and Birch, because of their fine physical characteristics and color, and because they lend themselves so readily to staining have become great favorites with the home builder. They make beautiful, artistic and durable floors and are highly recommended as substitutes for Maple when a darker finish is desired for harmonizing with the other finishes and decorations one has in mind.

An association of manufacturers in the Central West has been organized for the purpose of setting up and maintaining standards and furnishing uniform grades of Maple, Beech and Birch flooring to retailers throughout the country. It also protects the prospective home builder against any imposition which might be practiced because of the layman's unfamiliarity with the cost and qualities of these hardwoods.

The Maple Flooring Manufacturers' Association guarantees the quality of the flooring manufactured by its members. The flooring from these associated mills bears the trade-mark of the Association and also a number to identify the mill from which it comes. When purchasing your flooring, look for the trade-mark "MFMA" and when you find it, you have a guaranty of the quality of the product—a guaranty of the standard grades established by this Association.

In addition to the standard grades of Clear, No. 1 and Factory, some manufacturers offer special grades of White Clear Maple and Red Clear Beech and Birch. This stock is selected for color, but in all other respects it is the same as the grade of Clear. The selection of the proper kind of hardwood flooring for your home is largely a matter of personal taste and of price. White Clear Maple is employed where unusual, dainty effects are desired. It makes an exceptionally attractive floor for bedrooms. In other cases the color scheme may demand the use of Red Clear Beech or Red Clear Birch. The Clear grade of the three woods shows some variation in color. To many lovers of woods this is an added attraction. This grade makes the most durable and attractive floors for any building.

The grade of No. 1 is the second quality and its relation to Clear is similar to that between second and first grade of finish. It is just as serviceable as Clear and equally as desirable when there is no objection to its appearance. Its use effects a material saving in the cost of construction.

The Factory, or third grade, will give excellent satisfaction. When a low priced floor is wanted for wear, nothing better than this grade can be obtained at relative cost.

The standard thicknesses of Maple, Beech and Birch floorings for residences are 13/16" and 3/8". The 13/16" is manufactured in the 1½", 2" and 2¼" faces and the 3/8" is manufactured in the 1½" and 2" faces. The 3/8" thickness is especially adapted to modernize and beautify old homes by laying it over the old floors. It is economical to purchase and makes a durable, attractive floor.

Maple, Beech and Birch floorings are also made in other thicknesses and faces.

The standardized shape of Maple, Beech and Birch flooring is the result of many years of experience and careful study. The automatic machines which take the rough lumber and transform it into beautiful flooring are marvels of ingenuity. They manufacture the flooring, tongued and grooved, and matched, hollow backed and the least bit narrower on the back than on the face. This construction, of course, is meant to hold the flooring close and level, and simple though it looks, the exact shape which will go together easiest and hold the best, has been a matter of much study.

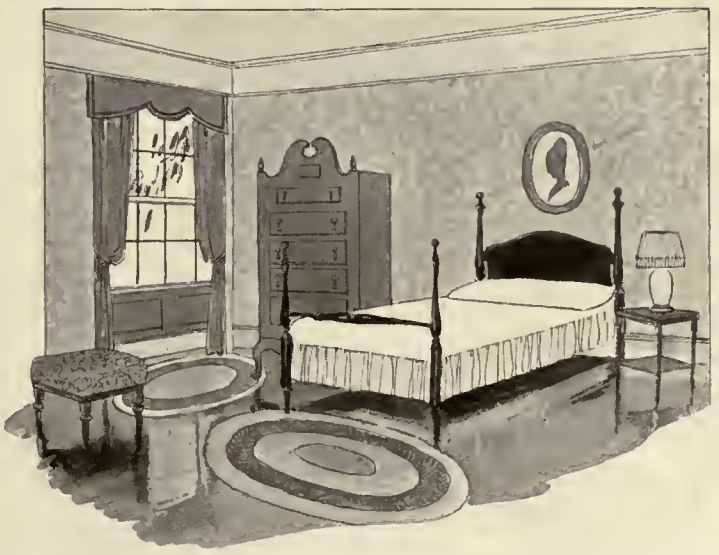
Hardwood flooring should be laid carefully to obtain the best results. It is not difficult to lay or finish Maple, Beech and Birch floors, but it should be remembered that good flooring may make a poor floor if it is not properly laid and finished.

Hardwood flooring should not be laid until after the building, including the plaster, is thoroughly dry and after the interior trim has been installed.

After the hardwood floor is laid, it should be scraped and sandpapered to a smooth surface. This scraping should be done with a sheering cut lengthwise of the grain. Then sweep the floor clean and wipe carefully with a soft cloth until all dirt is removed.

As to the best results of laying and obtaining different finishes on Maple, Beech and Birch floors the reader is referred to the chapter on interior decorating. "Color Harmony in Floors" is the title of the book issued by the Maple Flooring Manufacturers Association. A copy of this book may be secured by writing their offices, 1042 Stock Exchange Bldg., Chicago, Ill.

We urge the builder for his own protection when ordering Maple, Beech and Birch floorings to make a special point to see that he gets "MFMA" guaranteed floorings.

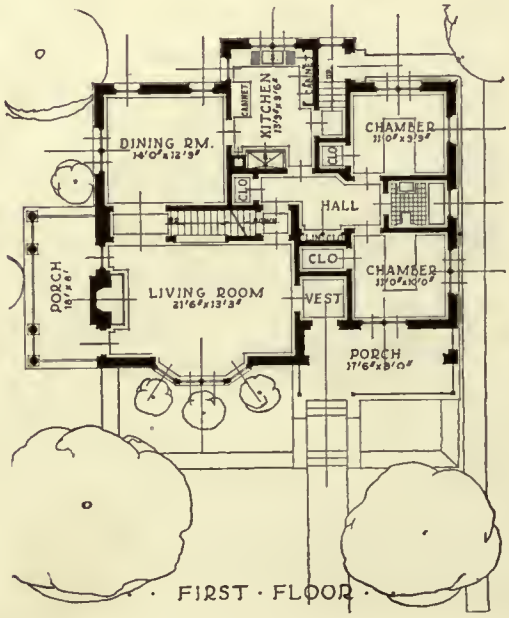




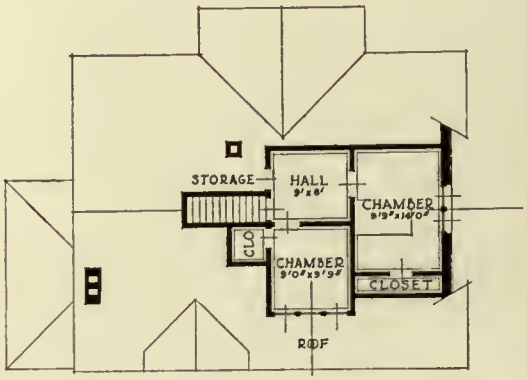
The Wetherby

To those who admire the bungalow type this design should have a strong appeal. The attractive bay window, front and side porches, and the use of face brick for exterior wall covering, combine to make up a very charming home.

From the inset porch one enters the vestibule, leading to a well designed living-room. Grill work is used on one side of the stairs which lead to the second floor. A door is designed at the top of the stairs so that this part of the house can be shut off or left unfinished, as complete living requirements are found on the first floor. The dining-room, kitchen, two bed-rooms with closets and bath complete the first floor plan. This home is 41′ wide and 32′ deep, with an 18′ by 8′ porch on the side, and will require a 75′ lot.



FIRST · FLOOR



· · SECOND · FLOOR · ·

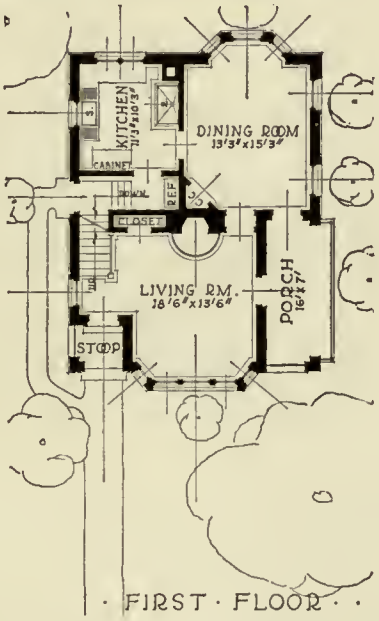


The Armston

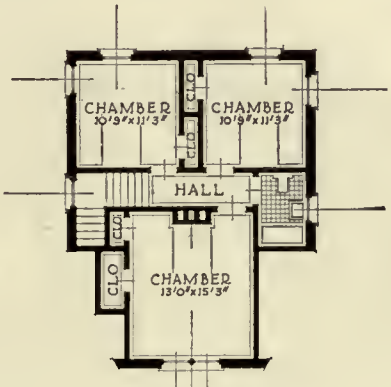
THIS home has extraordinary artistic worth because if its quaintness of design and is a good solution of the problem of getting beauty into the small home. The outside walls, with the exception of the shingled gable, are of face brick and lend a charm to its picturesque appearance. Noticeable features are the projecting bay window and the circular detail brick work over the entrance and porch.

The floor plan is attractive; the rooms are comfortably large and conveniently arranged for a small home suitable for a narrow lot. A covered stoop gives the necessary protection to the front entrance, which enters into the living-room. Closet for outside wraps, fireplace, china closet and handy place for refrigerator are other noticeable features of the first floor plan.

A semi-open stairway with space underneath utilized for grade and cellar entrance, leads to the second floor, containing three bed-rooms, four closets and bath. Size 26′ x 31′.



· · FIRST · FLOOR · ·

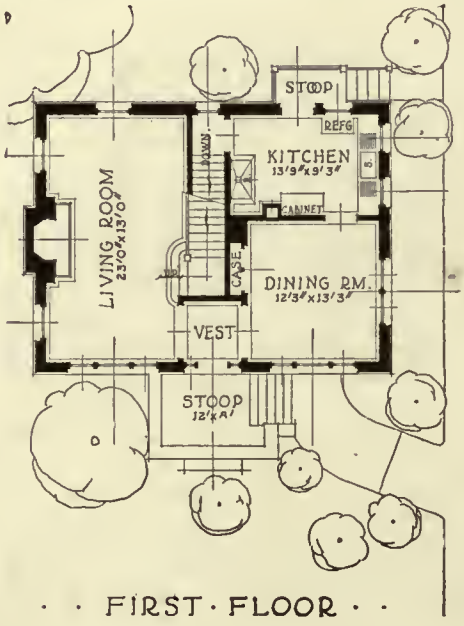


· · SECOND · FLOOR · ·

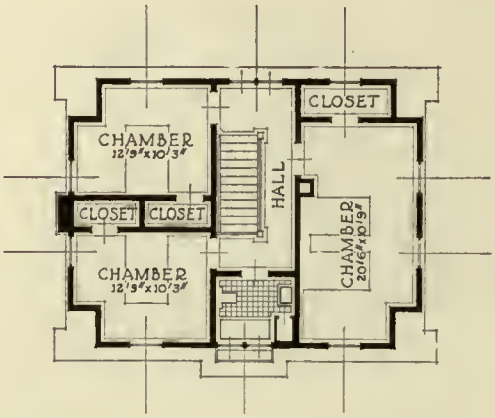


The Pendleton

Dutch Colonial architecture which always carries a home-like character is used to advantage in the design of this home. With lower walls of face brick and upper walls of stucco an unusually pleasing effect is gained. The Colonial entrance with side lights is in keeping with this type of home; it enters into a vestibule on one side of which is the dining-room and on the other side an exceptionally well planned living-room. A satisfactory living-room is one that contains plenty of light and ventilation and still leaves sufficient wall space to make an attractive furniture arrangement possible. Opening off the upstairs hall are three comfortable bed-rooms with closets and a good sized bath. The homebuilder naturally builds for comfort and convenience but should not lose sight of economy and permanency of materials. This attractive home, 35′ wide and 25′ deep, offers everything that is to be desired.



· · FIRST · FLOOR · ·



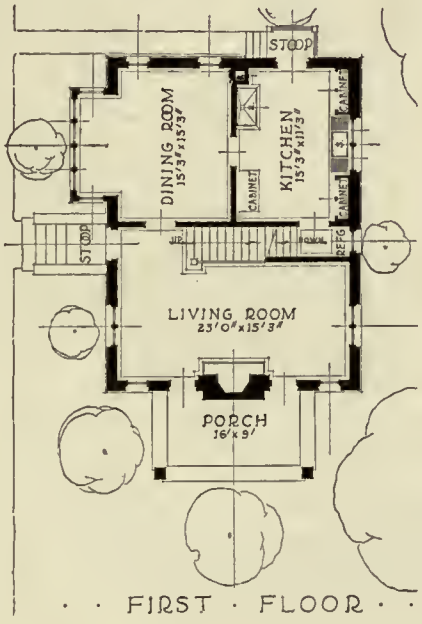
· · SECOND · FLOOR · ·



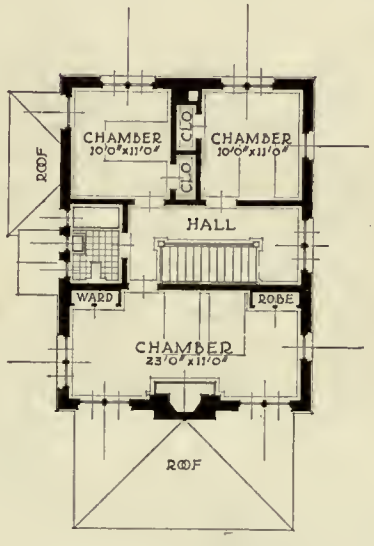
The Wexford

To those who appreciate the value of permanent material, absence of painting expense, and the dignity of a brick home of straight lines, this design will have a strong appeal. The entrance at the side with a large porch facing the street is a pleasing variation. It is particularly well designed for a narrow lot.

On the outer wall of the living-room is the fireplace balanced on each side with French doors which open on the porch. The stairway leading to the second floor from the living-room is very attractive. The dining-room with its deep bay window projection and kitchen complete the first floor plan. On the second floor are two medium sized bed-rooms and one large bed-room with closets and bath. This home is 25′ wide and 33′ deep, not including the porch or the projection of the bay in the dining-room.



· · FIRST · FLOOR · ·



· · SECOND · FLOOR · ·



ELECTRIC LIGHT FIXTURES

THE most primitive artificial light was probably the out-door fire. Then followed in order the torch of sticks or long grass, the crude lamp made of the skull of an animal, or if by the sea, by a sea-shell, in which fat was burned.

Then came the artificial lamp when man had learned the art of pottery. Many examples of this art, which seemed to take an especial delight in expressing itself in lamps and vases, have been dug up in the excavations along the Nile and Euphrates Rivers in the Greek provinces of Athica and Sparta, and at Pompeii, Tarsus and Herculaneum. The lamps found in these localities have shown the development along this line from the plain, unglazed pattern of early times to the highly artistic and elaborate styles of the later Athenian period; from the lamp with one wick to the high-powered lamp with a dozen wicks. The wicks, so we learn from the literature of those ancient times, were made sometimes with rushes and other vegetable fibres but usually, in the later periods, of flax-tow. The Eskimos of today have a lamp made of soapstone which is similar in principle to the most primitive lamp of the Asiatics and Southeastern Europeans. In this lamp there is no wick and animal oil is used.

It was not till within the memory of our great grandfathers that any considerable improvement was made in the matter of artificial lighting. One very objectionable feature down to the invention in 1786 by a Frenchman, Aime-Argaud, had been the smoke and disagreeable gases emanating from the burning oils. Argaud made a lamp with a circular wicket through the center of which passed a draft of air. This effected a larger burning surface which permitted complete combustion. Aime's brother conceived the idea that a glass flue would steady the flickering flame. The result of the two men's experiments was a lamp whose principles have been involved in every scheme of artificial lighting by combustion from that day to this. Wherever there is oil or gas lighting today you will see the Argaud burner.

The first electric arc lamp in practical use was installed in a lighthouse at Dungeness Lighthouse in 1862. Then came Grame's dynamo in 1870 which proved a speedy way for the advent of the present-day electric light system. In 1776 the Centennial Exhibition at Philadelphia boasted of but two electric light exhibits. Twenty-three years later at the Paris Exposition there were over two hundred entries.

In 1878 Charles F. Brush, of Cleveland, Ohio, devised the first complete system of arc electric lighting and a year later Edison's incandescent lamp was given to the world, and electricity was rapidly on its way to displace all other forms of artificial lighting. It is a long way to go from the dismal torch of our savage ancestors to the press-the-button-presto-change age in which we live.

In an electric lighting installation three factors are to be considered. (1) Maximum amount of light with (2) Minimum expenditure of energy and (3) Artistic appearance.

Wiring ELECTRICITY has become one of the most valuable aids to modern housekeeping. Safety, convenience, cleanliness, efficiency and economy are its advantages, which ought to be enough to convince the most skeptical of house builders, that his new home should be wired. As the work of wiring is invariably inspected by a public building inspector, and must be done to comply with the

building codes of the city, in order to receive a service permit, the builder will most always receive a satisfactory job along this line. Even though the homebuilder does not plan his own lighting and wiring system, there are many suggestions which will be helpful to our members.

It is best to have a layout which will show the location of all switches, side brackets, base receptacles, switch box and meter. It is always considered a good plan to keep the baseboard receptacles and the floor plugs on separate circuits from those which carry lighting fixtures. This arrangement will give every room at least two circuits, so that in any event of an interruption on one circuit, the room will not be left entirely without service. Worn, flexible cords used in connection with electric equipment, table or floor lamp, often cause a fuse to blow, but if the circuit connected is separate, it will not interrupt the lighting of any regular ceiling or wall fixture. This gives a somewhat larger number of circuits than is absolutely necessary and takes a few feet more wire, but it has the advantage of allowing a liberal capacity on every circuit so that if any unexpected large load is taken from any outlet, that circuit is not likely to be dangerously overloaded.

The location of the fixtures, will in a measure, depend upon whether they are to give a general illumination, or whether the light is to be directed to certain areas, such as reading table, side light for dressing table, wall brackets, etc. In locating fixtures, take into consideration the location of different pieces of furniture in the room. Nothing looks quite so unsightly as to have to run an extension in order to get light to the proper place in a room. Arrange your lights so they will illuminate as much of the house as possible and give a good appearance. Plan to have as many base, wall and floor plugs as is necessary to accommodate electrical equipment you intend to use. It is not convenient to have to take out a bulb in order to hook up an electric iron, toaster, grill, vacuum sweeper, heater or any of the other appliances which are fast becoming standard equipment in the modern home.







The control switches want to be located so that they will be the most convenient on entering and leaving the room. Do not place a switch behind a door or in a place where it will be necessary to walk through the entire length or width of a dark room in order to use it. The arrangement of switches in the main halls should appear to be especially convenient without over elaboration. In two story houses a three-way switch should be installed, to control the lights from the lower hall to upstairs hall or entry.

Always put switches where you will not have to grope for them. As, for instance, just within the door, hand high, next to the door in the hallway or adjacent to the door that leads into the living room. Where two or more switches are to be installed side by side they can be put under one plate.

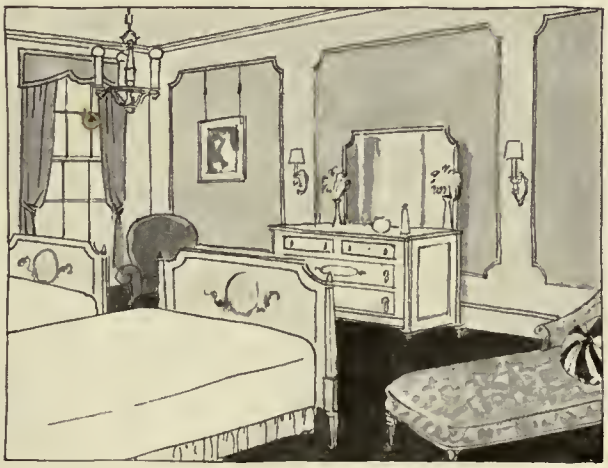
There are three kinds of switches: Push button, tumbler and snap. The snap type is not in general use for house lighting except in attics, basements, etc. The push button is visible to the eye in the wall and has been in general use for considerable time. The tumbler, which is the newer switch, is a tiny lever which can be pushed up and down very easily. It has all the good points of the button and snap switches, but does not need two fingers to operate it. It requires but the slightest touch.

There are four general house varieties in these switches: Single pole, double pole, three-way and four-way. The single pole switch enables you from one point to control the one lamp or collection of lamps operated together. The double pole is used when it is desired to break the circuit on both sides of the switch and it is possible to control any circuit of lamps from any two places. The three and four-way switches add additional points of control.

The rear entrance light should be operated from the same switch as the basement hall, it being considered that the former will rarely be needed except when going down cellar, and also that it will serve as a pilot, to show when the basement light has been left burning. If you plan to use an electric range, the service should be made heavy enough to stand the additional load and sometimes it is advisable to run a separate service for this fixture.

A means of protecting the wires that is being recommended by many underwriters, is to place them in conduit, which is a strong, smooth, water tight tube having its inner surface coated with an insulating compound. Wiring placed in conduit increases the cost over the knob and tube system, but is a good insurance against defects.

Nothing in home furnishing has shown such improvement in recent years as Lighting Fixtures. We are beginning to understand the important part they play in decorating the home and what is equally important—the comfort and convenience they add to living. If you were to go into an old fashioned electrical fixture store and see the monstrosities that were once allowed to become a part of your home—you will marvel that the sense of the previous generation of home builders ever permitted them to pass unchallenged. Do not let these showy



affairs of frosted and colored glass held together with gilt and brass scrolls called chandeliers creep into your decorative plan.

Physicians recognize the fact that lighting conditions in the home play a highly important part in one's physical welfare. Evidently the eyes are the first members injured by a glaring light and an aggravated condition of eyestrain will cause other disorders not so easily traced to the origin. The lighting question in the home should be given particular thought where children are concerned. The injury that may be done to the eyes while the muscles are still in the formative stage will, in many cases, endure and cause trouble for a lifetime.

The most common example of glare causing this condition is from a lamp not furnished with a shade or reflector. The practice of using a bare lamp is a result of habit acquired when less efficient fixtures were available. Today the elements of good lighting are better understood with the result that this part of home decorating has practically become revolutionized.

It is much easier to work in light pleasant surroundings than in some place where the outlook is cheerless or depressing. Every homekeeper knows that on mornings when it is dark and gloomy nothing seems to go right, but on bright sunshiny days, everything is a cheerful success.

Operators of large factories realize the importance of well-lighted work shops. It creates cleanliness, prevents accidents and keeps the workmen in a better frame of mind. This condition is not confined to the factory for the home requires the same efficiency. Kitchen, sewing-room, reading-room and laundry all must be well lighted in order to make the work in the home as pleasant as possible.

Living-room The living-room should be the one given the most attention as this is probably the room used the most. Good lighting in this room expresses a home lover's cultured taste. The varied social and home activities that center in this room make a ceiling fixture advisable for general lighting when occasion calls. For general purposes, however, real comfort with good taste can be obtained by wall brackets, candlesticks, torcheres and any of the many portable table and floor fixtures. Decorative when unlighted—they leap into spots of light and color when illumined—adding the final touch of intimately inviting charm and coziness to the room.

Torcheres or floor lamps serve splendidly as reading lamps, since they may be moved about and adjusted to any desired height. In many rooms it seems to be difficult to find proper place for side fixtures, owing to the popular use of scenic wall decoration, paneling, etc.

The size of fixture and the amount of light will have to be governed by the size of the room. Do not get them out of proportion. It is always advisable to provide auxiliary outlets in order to allow a comfortable rearranging of furnishings.

Dining-room A good effect is also desired in this room. An effort to concentrate the light from a central fixture onto the table itself—a gradual fading into soft shadows—embraces and holds the attention of the diners. A central fixture having a combination of candles and frosted bulbs which concentrate the light downward may be used. Central fixtures should be controlled by push button or tumbler switch which you want placed so it will be convenient on entering or leaving the room. Side wall brackets to match are appropriate and lend additional charm.

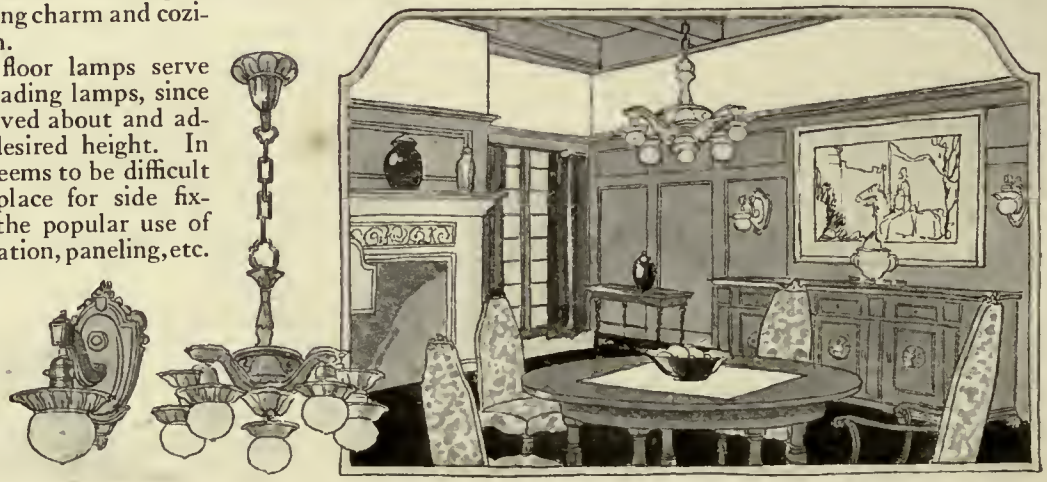
Library or Den In these rooms a spirit of rest with the quiet dignity of soft tone should prevail. Outlets for floor lamps which can be placed convenient to easy chairs and lounges—together—with wall brackets form a combination which indicate real reading comfort.

Kitchen The lighting in this room naturally should be planned to insure comfort and sanitation. A central fixture for general lighting with wall brackets over the work table, sink and stove usually meet the requirements. A well lighted kitchen is a pleasant place to work in. It is in dark rooms that most of the food is burned and dishes often broken.

Front Porch Entrance porch lighting serves an excellent protection against intruders and adds hospitality to your invitation to "come in." A charming tone is obtained with lanterns and brackets but they should be waterproof and have the appearance that they are built for outdoors and at the same time be attractive.

Sun Parlor This room requires harmony and the light fixtures should suggest that which it is—a sun parlor. A general lighting should be obtained from a central fixture and it may also stand carefully placed wall brackets, floor lamps and portables which are in keeping with the furnishings.

Entrance Hall The lighting of the entrance hall should diffuse a welcoming glow of soft cheerfulness suggesting hospitality. The main





fixture is usually a hanging lantern type, and if the room is large enough to stand additional light, a portable lamp and wall bracket suggest charm. A night light is inexpensive and always appreciated.

Bed-room The illumination in the sleeping rooms is often quite a problem, as it is sometimes impossible to decide where the different pieces of furniture are to be placed. Generally the plan should indicate a central fixture for correct vision in large mirrors. Distinction with real comfort can be obtained by using wall brackets on the side of chiffonier, dressing table and dresser. Desk and boudoir lamps of color to harmonize with the general scheme lend immensely to the complete plan. A bracket or lamp at the head of the bed is very handy for reading purposes.



Bath It is desirable that there be a ceiling fixture to provide general illumination. Correct lighting in all mirrors without glare is necessary and is best handled with brackets. The fixtures should be of nickel or of white enamel finish to be in keeping with other furnishings.

Fixtures In the accompanying illustrations we have shown some of the attractive detail of Riddle Feature Fitments, but owing to the fact that we are limited to one color it is impossible to do justice to the beauty of these materials. Riddle Feature Fitment embodies the characteristic features of correct design and decoration in inexpensive fitments for the average small home, apartment or bungalow.

Much of the beauty of Riddle Fitments is due to the Estofado Decoration. This type of decoration was developed after extensive research by Riddle Designers in order to introduce an entirely new note to interior lighting equipment.

The word "estofado" is a Spanish term indicating a decoration applied to metal the primary colors being freely used in a most refined manner.

In the Riddle process the Estofado Decoration is applied to virgin metal, much of the work being done by hand, producing a genuinely antique effect. This process is applied to all Riddle Fitments, including the Feature Fitment.



The Estofado Decoration is developed in two general color schemes. One of these is the silver Estofado, which is designed to blend softly with the cooler and lighter tones of the room, in which the fitments are placed. The other is the gold Estofado with its rich hues ideally suited to harmonize with the warmer color schemes.

Unlike the finish of ordinary lighting fixtures, the Estofado Decoration of Riddle Fitments is permanent. No refinishing is ever needed, even in coastal climates, and salt water atmosphere. These Fitments are thus an excellent investment from the standpoint of economy, to say nothing of the greater beauty they add to the home. The color tones of the Estofado Decoration are so blended as to harmonize with practically any color scheme of interior decoration, enriching and beautifying the surroundings.

Vellumesque Shades are another exclusive Riddle product. When lighted they produce a pleasing diffused glow, yet they provide the necessary reflecting qualities for practical illumination. They retain their shape, are extremely durable, and may easily be cleaned with a soft cloth and a few drops of oil. The larger shades are fitted with an ornamental cast metal crown as an improvement over the wire top commonly found in so-called "parchment" shades.

Vellumesque Shades are especially designed for use with Riddle Fitments, but they are well adapted to use with any lamp. The life and usefulness of many a lamp have been indefinitely prolonged by replacing the old shade with a beautiful Vellumesque Shade.

Complete harmony can be had by using the Riddle Fixtures. One and two-candle wall fitments with vellumesque shades are made to match ceiling fixtures which are designed in sizes ranging from one to five lights. This complete harmony in color and design can be carried through the entire home for the line of Riddle Feature Fitments covers such valuable lighting decorations as Torcheres, Bridge Lamps, Luminors with Vellumesque Lanterns, Chairside Lamps, Floor Lamps, Boudoir Lamps, Console Sticks, Table Lamps, Book Blocs and Aquariums.

In many ways there is no one feature of interior decorating that is so important as the lighting.

The most beautifully appointed room may be marred by inappropriate lighting equipment. On the other hand many a room has seemingly been made over by a change in the lighting scheme.

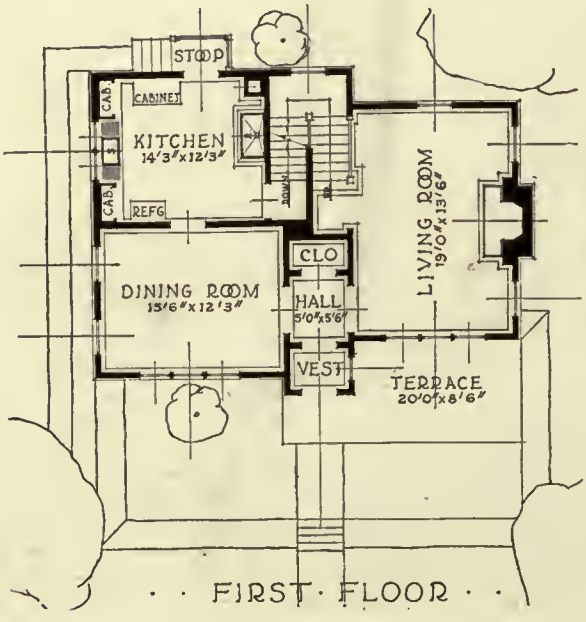
The prospective homeowner or home builder can hardly give too much consideration to the interior lighting. A little extra thought and care in this direction will add greatly to the appearance of the home, to the enjoyment of it, and to its value also. You will find it well worth while to consider the advisability of installing Riddle Fitments, which lend such distinction to any interior, whether building for your own use or for sale.



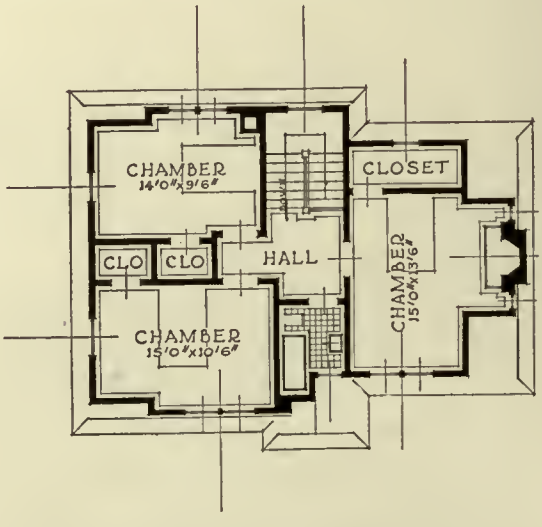
The Manor

This design embodies an old fashioned quaintness that should appeal to almost everyone interested in this size home. The construction of the roof is handled very nicely in breaking up any suggestion of plainness. The projection at the front forms a vestibule which enters the hall separating the living room and dining room. The balance of the first floor plan is devoted to a well arranged kitchen, main and cellar stairs. The arrangement of one stairs above the other is a good space saving idea. Note the convenient arrangement of kitchen equipment which will be appreciated by every housewife.

The main stairs open off the living room, which is well proportioned with good window arrangement and cheerful fireplace. The hall on the second floor opens into three large bed-rooms, each having two sides exposed, giving cross ventilation, and a good sized closet. Size 36′ by 26′ deep.



· · FIRST · FLOOR · ·



· SECOND · FLOOR · ·

AUTOMATIC REFRIGERATION

A valuable equipment which promotes convenience and health.

A FEW years ago in the far frozen north, a monster mammal was dug from the ice into which, according to the strata in which it was found, it had been frozen for more than a quarter of a million years. The men who discovered the huge quadruped decided on a test of the natural refrigeration in which the animal had been preserved for more than 2,500 centuries before Adam and Eve walked in the Garden. From the loins of that monster they cut a steak, prepared it in the usual way, and made of it a palatable and wholesome repast!

That, all will have to agree, is efficiency in refrigeration. In artificial refrigeration the nearer the approach to the conditions which perfectly preserved that steak for a hungry company of explorers under the Arctic circle for a period a hundred times greater than that covered by human history, the nearer will the artificial method approach nature's method in efficiency.

What were the conditions? (1) Absence of moisture. (2) Uniform low temperature. When the huge monster of the Arctics met his death beneath the thundering avalanche, there were in his body all the natural elements which make for decay. Millions and billions of bacteria circulated through his veins and capillaries and were present to do their work of destruction the moment death overtook him. But in his case, the moment the oxygen he breathed ceased its warmth-giving and life-giving functions the destroying bacteria were arrested, became inactive and lay dormant for two hundred and fifty thousand years.

In a temperature always far below the freezing point, there never was a time through all these millenniums when moisture could come to the aid of a single one of those billions of bacteria. The result was perfect preservation.

If the conditions are right the refrigerator may be made to do its work quite as well. But it can't be done with ice. Ice efficiency in refrigeration lies in the fact that the ice imparts its temperature to its surroundings, and in doing this it loses its character as ice for that of water. The result is that the air within the icebox becomes saturated with moisture, and one of the conditions necessary to decay is fulfilled. A temperature above fifty degrees fulfills the other condition, and when the ice in the ice compartment decreases to half the capacity of the icebox the temperature stands at fifty, and as the quantity of ice further decreases the temperature proportionately rises, and until the icebox is again filled the two conditions favoring rapid increase of bacteria and, hence, of decay, are present, namely excessive moisture and a comparatively high temperature.

Aside from the decay incident to moisture and a temperature above fifty, are the unpleasant odors always present in a refrigerator in which ice is the refrigerating agent. It is not necessary to remind the housewife of the obnoxious impurities which gather in the ice compartment of a refrigerator of the ordinary type and of the constant vigilance necessary to prevent contamination not only by bacteria, but by disease germs.

We remind the reader a hundred times through this little volume that economy does not involve merely the initial cost of installation. It comprehends cost through a number of years. And once more we like to use the phrase, "The difference between a *house* and a *home*," for it applies with the same force to the present subject as it applies elsewhere. We now speak of another of those differences, and, as elsewhere, the difference does not express itself in terms of economy, for a modern refrigerator will save its extra cost in a very few months, and in a very few years will prove to be an investment. And, as in nearly every other instance, added convenience, added efficiency and added comfort are had at a smaller ultimate outlay of money.

It is true that the problem of preservation of foods has been met in the past, in a limited way, by the use of ice refrigeration, the temperature of which is reduced by the melting of ice. But this method is troublesome, uncertain, unhygienic, expensive and generally inefficient at best. The very condition which effects the cooling process, in the old method, reduces by so much the cooling power of the refrigerating agent. What happens? A temperature in the ice-chest rising toward, and passing the deadline of fifty degrees, at which point decomposition and spoiling of foods begin.

A recent investigation showed that more than half of the iceboxes in use registered a temperature above the danger line. The result, of course, is that in one-half of the iceboxes in use in the homes in this country, there are present the two conditions favoring the development and destructive activity of bacteria, namely, extreme humidity and comparatively high temperature. In such boxes deterioration is hastened, odors of foods are intercommunicated and conditions generally are not conducive to cleanliness and sanitation.

These are the negative qualities of the old icebox. It is more pleasant to contemplate the positive qualities of the new method of refrigeration. Here we have ideal refrigeration at less cost than ice; a constant dry "cold" at a temperature that is lower than ice, does not fluctuate regardless of outside temperature, keeps foods fresher and better than ice, makes you independent of the iceman, does away with dangerous drain pipes, operates without attention from anybody, and is always dependable.

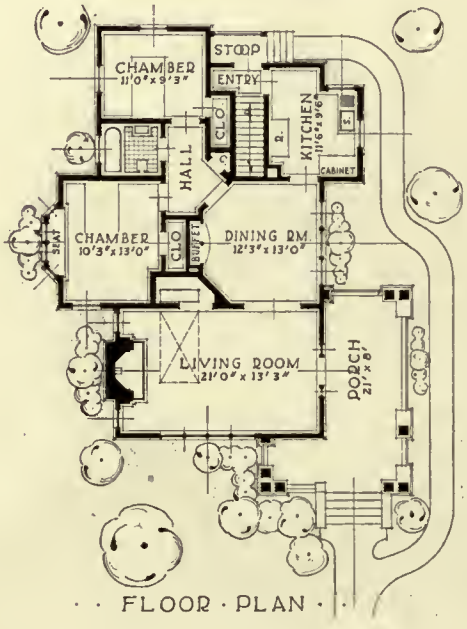
The only item of upkeep incident to the use of an electric refrigerator is the inconsiderable one of the current it consumes and this item will be substantially less than the cost of ice. However this method refrigerates *all* the contents *all* of the time, not *some* of the contents *part* of the time.



The Mt. Pleasant

HERE is a beautiful bungalow artistically designed both as to exterior and interior. The porch with its heavy columns, built-up rail and wide projecting eaves is well sheltered and offers privacy. On account of the numerous projections, this house will require a good sized lot, the overall dimensions being 32′ wide by 44′ deep which does not include the porch.

The living-room is most delightful with an attractive fireplace at one end and casement windows on each side. The plan provides for the installation of a Murphy Door Bed which adds to the efficiency of this home. The dining-room is especially attractive with a built-in buffet in the inside wall. The hall which opens from the dining-room leads to the bed-rooms and bath, each bed-room having a good sized closet. The kitchen, rear entry and cellar stairs complete this well laid out plan.



FLOOR PLAN



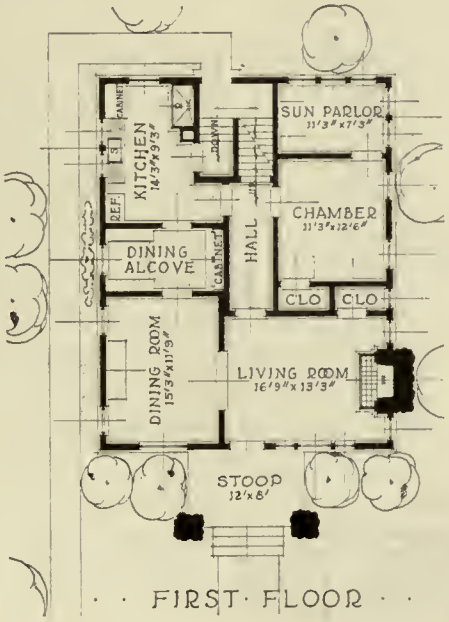


The Waterford

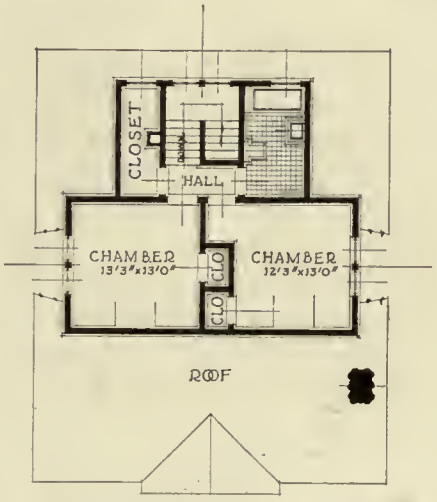
THIS is surely a charming bungalow with its wide eave projection, supporting brackets and heavy timbered hood. A very unusual and attractive treatment has been given the dormer and the roof. The cobble-stone chimney and porch piers add to its beauty.

The interior contains a surprising amount of room exceptionally well arranged. The living-room and dining-room run across the front, separated by a pair of French doors. Between the dining-room and kitchen is a dining-alcove with a large china cabinet. This space can be converted into a pantry if so desired. In the kitchen, which opens into a grade entrance stairs leading to the basement, there is space provided for all the necessary modern kitchen equipment.

An enclosed stairs entering from the lower hall leads to the second floor, which has two bed-rooms, bath and closets. This home is 30′ wide and 38′ deep.



· · FIRST · FLOOR · ·



· · SECOND · FLOOR · ·

INTERIOR DECORATING

ALL homebuilders, women and men, are, or should be, interested in making the house they plan to build a livable and attractive home. At first thought the problem of interior decorating may not appear to be a problem. We purchase books and magazines which are full of valuable suggestions and get our minds filled with ideas but somehow we lack the magic touch which enables us to materialize the ideal into the real.



Interior decorating often invites the thought of large expenditure, but do not let the matter of dollars and cents prevent you from forming some well planned scheme to make the interior of your home artistic. By the exercise of good judgment and good taste we may, at a comparatively small cost, produce a charming interior so rich in individuality and artistic value that the matter of expense will never suggest itself to the mind of the builder.

Live with your home as well as in it. Let it express a part of you, your personality, and breathe the atmosphere of hospitality, restfulness and warmth. The principles of interior decorating are as readily applied to the simplest home as they are the most elaborate. Homebuilders should consider the architectural features of their home and select the furnishings and finishes for each room in a comprehensive, professional manner. Nothing will give more satisfaction than to know that your own personal thought and good taste have added charm to the interior of your home.

If we have become very tired with strenuous inside work and feel the need of a vacation and rest we appeal to nature and the outdoors, spend our time golfing, swimming, boating and camping in the woods and come back feeling thoroughly rested. How many of us can spend the same amount of time in the living-room of our home and get the same amount of benefit? The idea of spending a month in the home to rest seems quite out of the question, yet it is the woman who twenty-four hours of the day is forced to endure poorly papered walls, ceilings that seem on the point of dropping down on the head and rooms stuffed with mighty masses of ill assorted, poorly arranged furniture that lack even the virtue of being useful. This alone should prove there is a modern need for serious effort to furnish and finish a home so that it will offer a cheerful place in which to work and rest.

The walls, ceilings, woodwork, floors, windows, fixtures and furnishings should be treated as to size, color, and tone so they will blend into true harmony. The most expensive furniture and fittings will lose half their charm if placed against a background of ugly wallpaper or poorly chosen rugs. Even a kalsomined wall and a modest rug selected with thought as to color will produce a more pleasing result than a costly, inartistic selection. It is possible, of course, to carry a color scheme to the point of monotony, but it is almost as bad to have no color scheme at all.

Color Harmony In planning the decoration of a home the color harmony should be the first consideration. Color has a true magic. You are probably more familiar with the result colored clothes will produce in the appearance of stout or tall men. For instance, gray accentuates the size of a stout man whereas some darker color would make him appear much less portly. The same magic in the selection of colors applies to your home.

Interiors are very susceptible to color treatment and decorative effects can make or unmake a home. Red is designated as an aggressive color inasmuch as its light rays travel fastest. Blue, on the other hand, is a receding color for the opposite reason. However, the strength of color has much to do with the actual result. A dull red does not bring the surface apparently as near the eye as a brilliant red, while a dull red or very pale red may appear farther away than a very bright blue. When an appearance is desired which will bring an object nearer the vision red is usually employed; for the opposite reason the dullest blue or black is

excellent for backgrounds where the feeling of space is required. Green and gray are considered static colors and give the appearance of retaining their apparent position. Yellow, in which the rays of light expand in all directions, is considered the best color when the apparent size of an object is to be enlarged without changing the position of that surface. For that reason, orange can either make a surface appear smaller depending upon the amount of red it contains or make it appear larger if the yellow predominates in the mixture which makes the orange. Violet can either be aggressive or receding depending upon the amount of red or blue which it contains. Light violet, unless it contains too much red, is also a static color.

The range of colors suitable for interior painting is somewhat limited. Brilliant colors would be too conspicuous and many of the beautiful soft tints which are available for interiors would not stand either the glare of the sun or the rigors of rough weather. Problems to consider are permanence or durability and harmony with surroundings. Take into account the natural lighting of a room or its outlook when selecting the colors for it. Since yellow is a sunny color it is well suited for use in a north or poorly lighted room. On the other hand, soft green, bluish gray or gray green might well be selected for rooms facing the sun that might be too suggestive of warmth on bright days if the dominant color were yellow or red.

Colorists tell us that yellow cheers and stimulates, red excites, blue restrains and calms. They tell us, too, that since red is an advancing color a room in red contracts; while a room in blue expands because blue is a receding color. Whatever selections are made large areas should be in subdued tones. Bright reds, deep blues, purple, orange or brilliant green may be effective in certain combinations when used in small areas but when overdone they become vulgar.

Do not attempt to introduce a variety of color schemes on the same floor or in a suite of rooms. If the living-room, dining-room and hall, for example, are connected by large openings, the scheme might well be the same throughout these rooms. If single doors are used in the openings greater freedom is permissible. Where a hall separates two rooms a different scheme is allowable in the two rooms providing there is a key color that will tie them together. Plan the combination so that when seen from the chief viewpoint the general effect is a complete, harmonious room.

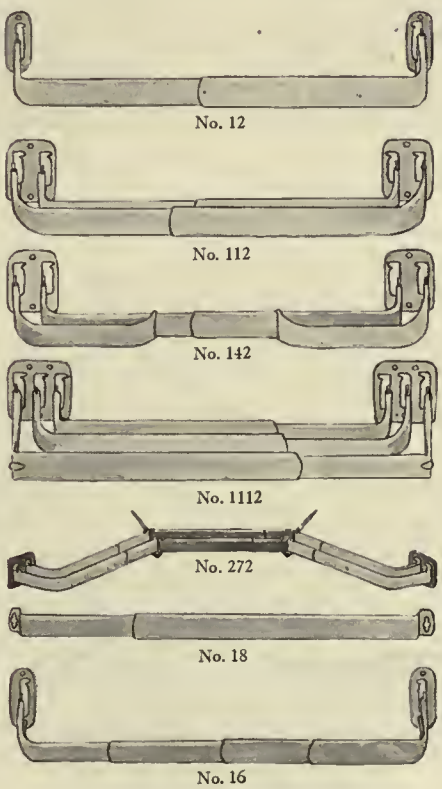
This principle of harmony should be applied also to hold together the ceiling, side walls and floor of a room. A perfectly white ceiling with ivory wood trim and soft yellow walls would be a violation of this principle. The white of the ceiling would be unrelated to the colors on trim and walls. A little yellow in the ceiling color, to make it cream, will key the scheme together and make it harmonious.

Keep the colors subdued and avoid strong contrasts. Walls, floor and ceiling should always be less intense than the objects which are to appear against them. Using delicate, neutral tones with ceiling lightest, sides next, floors darkest and trim either a deeper or a lighter shade than the side wall color gives the room or suite an air of restful comfort.

In order to make any practical suggestions on color combinations for the interior of your home it is first necessary for us to know the design which you intend to build and the position in which it will face on your lot. We have prepared many happy combinations which will meet almost all conditions for each design illustrated in this book, but the best way to plan the interior decorating of your home is to let your own ideas play an important part in making it attractive and with the assistance of our department of service we hope to bring your ideas into practical existence.

Treating Interior Walls

Walls are the background of a room. Against them we decorate and furnish. Therefore, upon them depends much of the success or failure of a room. The study and attention given them will be amply justified. Before deciding upon the treatment for the walls there are a number of things to be considered. First, if the decoration of the interior is to attain any measure of success, the wall finish must be suitable to the architecture of the house and the character of the room itself. The exposure and purpose for which the room is to be used have to be considered as well as the furniture that is to go in it.



A rustic bungalow type of home conveys a spirit that calls for the exact opposite of a finely patterned papered wall and rough plaster finish would be entirely out of place in a Colonial house. Study the architecture of the home you are about to build and be sure to select wall finishes which will be in harmony. In a Colonial type of house the walls, to be consistent, should be panelled or wainscoted in white, papered and painted. In an Italian plastered house the walls may be finished in rough cast and the bed rooms should be tinted or painted. In an English cottage type of home you naturally use a cottage type of walls—plaster with beamed ceilings on the first floor and

smooth plaster tinted walls on the second floor.

Painted walls have the advantage of being easily cleaned and although the initial expense is considerable more than papering a good paint job will outlast a number of paper jobs. The finish should be dull and flat except in the kitchen and bath which should have enamel finish. Stair halls should have a semi-dull finish.

When painting walls considerable thought should he given to the color as the paint goes on to stay for a number of years. While the painted wall that is finished dull cannot be washed with hot suds and powder, which is possible with an enamel finish, the shine and gloss of enameled walls is both unpleasant and in poor taste. A semi-dull, which is sometimes called satin or egg-shell finish, is fast coming into popular use.

Tinting is an inexpensive way of finishing walls and permits of various uses. In a new house, it usually takes some time for the plaster to become entirely settled and it is a good plan to tint the walls for the first year. Later on, more permanent finishes can be applied such as paper, paint or panelling. This method will allow you to try out different tones of color and by the time you are ready to apply your permanent finish you will know what tones suit you best.

Interior Woodwork ALL interior woodwork that is to have a varnish or enamel finish should be smooth, clean and dry and properly prepared to receive the finish. Painted and enamelled woodwork is much more expensive than stain and varnish for it usually takes about five coats to make a satisfactory job. Interior wood stains are not intended for protection but are used to modify the color of the wood and bring out the grain.

After the stain has been applied to the wood it should be rubbed with a wad of excelsior, a clean cloth or piece of felt, which will do away with any dust that may have settled upon the stain and also a part of the pigment in it which stays on top of the wood. Then apply shellac, varnish or wax. An egg-shell finish is obtained by rubbing the final coat of varnish with a piece of felt and pumice stone and water or crude oil. Water will give the finer finish, but oil will give a flatter finish and will do the work more quickly. A flat or dead finish can be obtained with the varnish by rubbing the final coat with haircloth and pumice stone and crude oil. A polish finish is obtained by first rubbing the final coat with a piece of felt and pumice stone and water and then polishing with rotten stone and water.

For enamelled woodwork the best results can be obtained by first thoroughly cleaning and sanding perfectly smooth all surfaces which are to be treated and then apply one coat of lead and oil, sand it smooth and apply two coats of paint for under coating. Each coat should be sanded lightly; then one coat of enamel and when thoroughly hard smooth off with steel wool or fine sandpaper and then apply the second coat of enamel. If a gloss finish is desired, two coats of enamel are usually considered sufficient; but if a rubbed or dull finish is desired, three coats of enamel are recommended, the final coat being rubbed with pumice stone and water.

Curtains and Draperies WINDOW treatment, as we understand it, is a comparatively modern development. How dreary would the modern home be without a touch of color at the windows to soften the crudities which sometimes appear? Colorful, well made curtains and drapes will cover up defects and tend to emphasize the beauty and liveableness of a room almost more than any other decorative feature. Most all of us can remember the so-called old-fashioned home where the windows, though large and having the possibility of good treatment, were covered with inside blinds, heavy damask and tapestry and were used for the purpose of keeping out cold, drafts and, in a great many cases, shutting out sunlight. The outstanding note of decorating in the modern home is brightness and the warm colors of the window decorations reflect the spirit of the times.

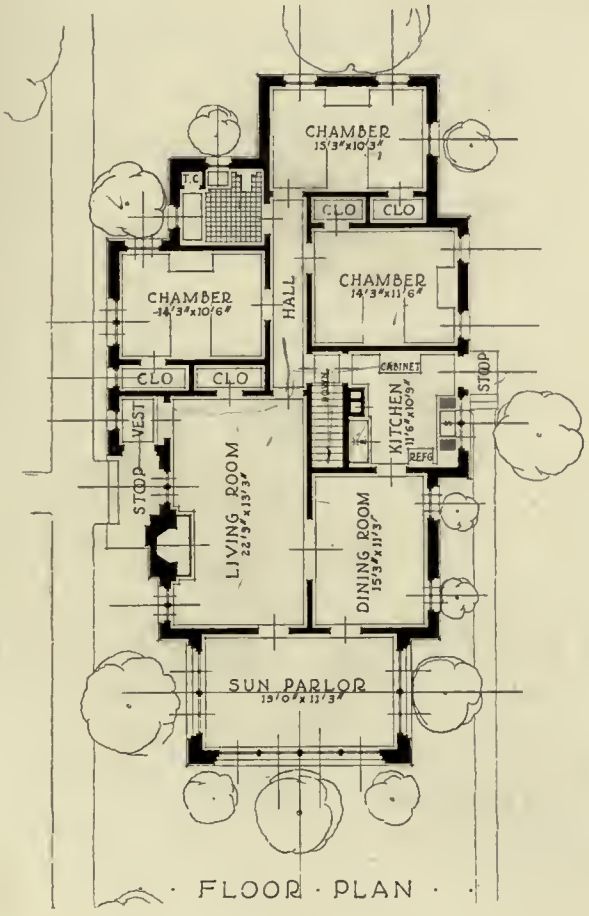
In materials, cretonnes, because of their brightness and general utility, continue to be in vogue and for that reason many flat, shaped valances are used to show the design of the fabric. Plain materials, such as silks and mercerized cotton with their soft sheen, rich damasks in mellow tones, beautiful poplins and brilliantly hued madrasses are also popular. When in solid colors these materials appear at their best draped, festooned and plaited.

It is impossible to lay out any fixed styles for draperies. A style that is good in one room would not be good in another according to the size and use of the room. There is a certain psychology in the drape independent of the design of the fabric. Curves suggest joy, straight lines serious thought. A straight valance fore-shortens the height of a high ceiling and increases the length of the side wall. If the ceiling is low the upward angles or lines of the drape give the appearance of greater height. Not only must the size and proportion of the room be considered but also the height and width of the windows.



Curtains in the windows serve other purposes save from the part they play in the decorating of a room. Thin curtains made of soft, transparent material such as lace, if hung in soft folds over the window, soften the glare of the light, screen the family life within from the curious gaze of the passerby, and protect the inside win-





FLOOR · PLAN

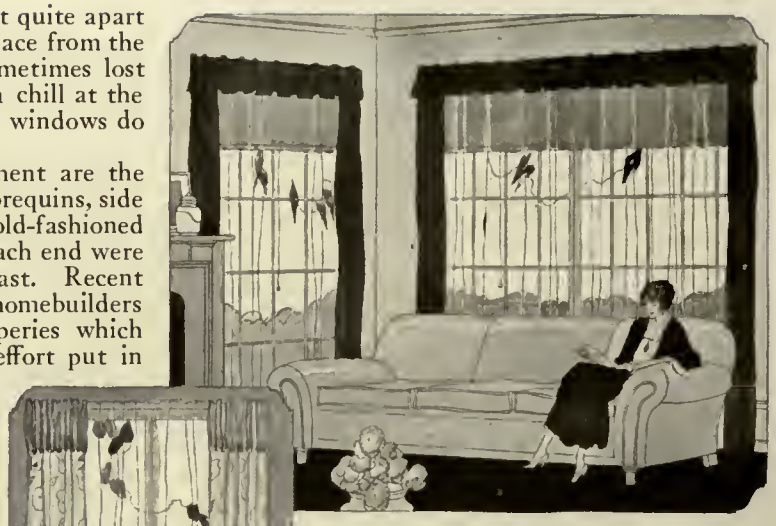
The Athens

For those who desire a distinctive type of home embodying convenience and character, The Athens should have a strong appeal. Although it is one of our larger bungalow types, it was designed with the idea of making it practical for a narrow lot. The use of face brick adds much to the sturdy appearance of this design and it is a pleasure to know that this material can be used in place of wood at a very small additional cost.

The front of the plan is devoted to living-room, dining-room, sun-parlor and kitchen, the three main rooms being connected by French doors. In planning the bed-rooms one should keep in mind that it is desirable to have them separated from the living quarters of the house as much as possible. You will note that the long hall with a door entering the kitchen and living-room carries out this idea very nicely. A good sized closet is shown in each bed-room and the bath-room contains all the necessary features. A considerable saving can be effected in the construction of this home by excavating only half of the basement which is all that is necessary for the proper placing of heating plant, fuel room, fruit room and laundry. This design furnishes ample insurance against dissatisfaction and is sure to be admired by all who see it. The size of this plan is 34′-0″ wide and 66′-0″ deep. It should be placed on a 50′ lot if you require a driveway to garage.

dow drapery from the sun and dust, but quite apart from this is the decorative effect of soft lace from the outside of the house, a fact that is sometimes lost sight of. Have you ever experienced a chill at the barren appearance of a home where the windows do not show a sign of life of drapery?

Important to proper window treatment are the curtain rods upon which valances, lambrequins, side drapes and curtains are hung. The old-fashioned round rods with ugly, flashy knobs at each end were an eye-sore and are a thing of the past. Recent inventions have placed in the hands of homebuilders fixtures for hanging curtains and draperies which are worthy of the expense, care and effort put in them. Very popular curtain rods which have found much favor and meet all requirements are Kirsch Flat Curtain Rods. They lend themselves to the attainment of any desired effect and make artistic window draping a matter of easy accomplishment. The old-fashioned round curtain rods sag and oftentimes buckle. For this reason Kirsch curtain rods are made flat shape which gives them sagless strength. They are manufactured in white or velvet brass finish and it is claimed that they never turn black, tarnish or rust.





Design No. 12, a single flat rod with detachable brackets, takes care of a treatment where only one set of curtains is used. The standard projection of Kirsch rods (which is the distance from the face of the casing to the inside of the rod) is 2½ inches. This allows sufficient space for the window shade. But they are also manufactured in 1½, 3¼ and 4 inch projections. The double rod, design No. 112, takes care of a window treatment where valance and side drapes are used. As a wide window is made to appear still wider and shorter if a valance is used it is sometimes better to omit the valance. For this method of draping the "no valance" side drape rod, design No. 142, is ideal as it leaves none of the outer or over-drape rod exposed. The triple rod, design No. 1112, can be used where a valance, side drape and inner curtain are desired. Design No. 272 is a double rod manufactured with detachable angles and brackets and is intended to be used in an angling bay window. This eliminates the necessity of using three separate rods and offers the possibility of the three windows being treated as one. Shirring curtains on top and bottom rods is very popular for French doors; close-fitting rods such as design No. 18 are best adapted for this purpose. These rods make an unusually neat drape whether one rod is used at top only or one at top and one at bottom. Design No. 16 is a sash rod and meets the requirements of windows in the kitchen where it is desired to fasten the curtain directly to the sash. These rods may be used at top or top and bottom as desired. This rod in white finish makes an ideal rod for bathroom sash.

The window requirements of each home vary owing to the difference in size, shape and number of windows and for this reason we will not make any serious effort to offer general suggestions. The department of service on interior decorating has been established so that each member of our Society may receive personal assistance and suggestions in planning the interior of his home. As stated before, you will feel better satisfied in knowing that your own ideas played an important part in making the interior of your home attractive. Our department of service will assist you in developing these ideas into practical existence. Sketches have been prepared which will offer suggestions on window treatment for each size and style of window planned in the home in which you are interested.

Floor Finishes

There is probably no surface about the home that receives the severe wear and tear that the floor gets. Whether it is from the nails in the heels of our shoes or the moving of heavy furniture, the result is the same and to make matters worse there is nothing quite so noticeable as a shabby, worn floor. Varnished and waxed floors are here to stay owing to the popularity of small rugs which can be easily removed for cleaning and which add beauty to the decorations. Homebuilders are growing more appreciative of good woods for floors. In another part of this book we have discussed the value of Oak, Maple, Beech and Birch floors. These hardwoods are naturally the best for flooring and even the hardest of these are apt to show marks when the piano is moved or a heavy article dropped. The floors are the foundation of room decoration and should be finished to harmonize with the hangings and furnishings. The floors should give the assurance of being substantial and should be the darkest part of the room so far as tone is concerned. While there are exceptions to this general rule it is best to keep that principle in mind.

The object of stain is to alter the color of the wood and also to emphasize the beauty of the grain. Parts of the wood are softer and more porous than others and absorb more color so that when stain is applied it will reveal lights and shades and varying depths of tone which are scarcely perceptible in the raw wood.

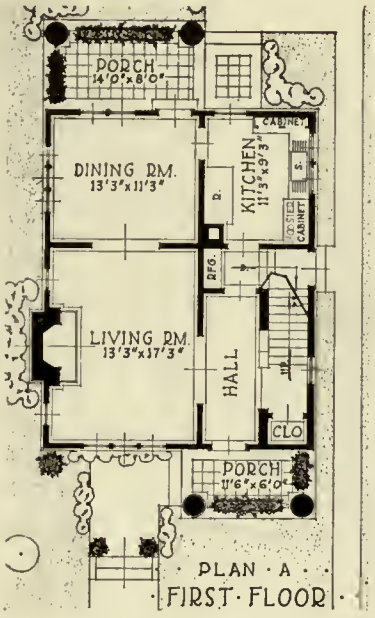


The Stanton

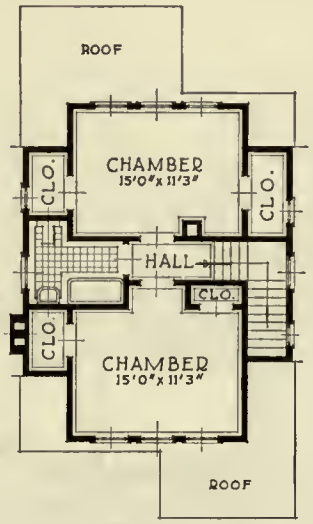
This home, size 24′ x 30′, was designed for a narrow city lot and possesses a degree of character and distinction seldom found in a home as small as this. The idea of simplicity and quaintness has been maintained by the extra wide shingles used for the exterior. A choice of two floor plans is provided.

In plan "B" by a rearrangement of the staircase a large closet is added in which there is a Murphy Door Bed installation. This does not detract from the comfort or cosiness of the living-room but at the same time it supplies extra sleeping quarters when required. The terraced entrance at the front with roof supported by long columns is distinctive. A similar porch is found off the dining-room in a larger size, 14′ x 8′, which affords privacy, as it faces the rear lawn.

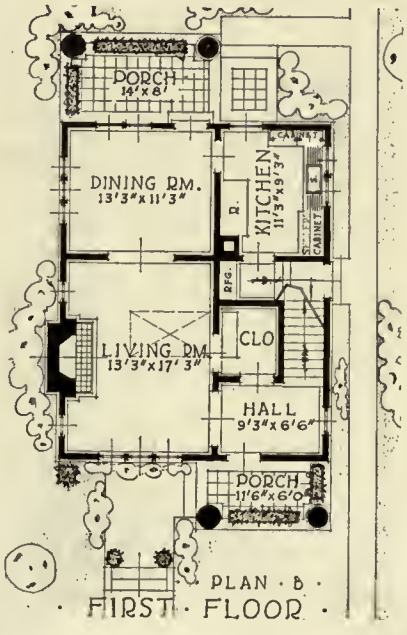
The second floor of both plans are identical, containing two bed-rooms and bath.



PLAN · A · · FIRST · FLOOR ·



· · SECOND · FLOOR · ·



PLAN · B · · FIRST · FLOOR ·

Oak Floors The personal taste of the home-builder and artistic decorative effects are the guides of the floor finisher. Until recently it was customary to finish Oak floors in shades of light or dark brown only, but now it is quite the thing to have the floors finished to harmonize with the woodwork and other furnishings of the room. For example, natural finish or weathered in the library or living room, gray in the dining room and forest green in the sun parlor so that each room becomes an expression of the owner's idea.

The clear grade makes a beautiful floor when finished with natural oak filler—color of Oak. For the select and sap clear grades a light golden oak filler or any of the popular finishes can be used. After the floor is filled it should be gone over with a little burnt umber mixed with turpentine to darken light streaks; this will make the select and sap clear grades appear similar to the clear grade except that the color will be slightly darker.

Treat the floor with a paste filler of the desired tone to fill up the pores and crevices. To thin the filler for application one has the choice of using turpentine, benzine, wood alcohol or gasoline to get the right consistency. Never use a liquid filler. When the gloss has left the filler rub off with excelsior or cloth, rubbing against the grain of the wood. This will make a perfectly smooth and level surface. Allow the filler twelve hours to dry or set and then apply two coats of white shellac before applying the wax. When varnish is to be used give one coat of filler and one or two coats of varnish. The wax finish is preferred by many due to economy and ease of renewing places that show wear. The renewing may be easily applied by housekeeper or servant.

Wax Finish The best method of applying the wax is to take cheesecloth and double it to get added thickness; then fold into a sort of bag. Put a handful of wax inside and go over the floor thoroughly. It will be found that the wax works through the meshes of the cheesecloth and gives an even coating over the floor. This prevents waste and excessive wax in spots. After the floor has been gone over with the wax and allowed to dry about twenty minutes, it is ready for polishing. Rub to a polish with a weighted brush, first across the grain of the wood, then with it. (A clean, soft cloth may be used in place of the brush if desired); then a piece of woolen felt or carpet should be placed under the brush to give the finishing gloss. After waiting about an hour, a second coat of the wax should be applied in the same manner and then rubbed to a brilliant polish.



Varnish Finish This is usually more expensive than the wax finish, but it gives a very hard surface, which at the same time is elastic. One or two coats should be applied after the application of the paste filler. Any of the standard hardwood flooring varnishes will give good results.

Maple Flooring Maple flooring is so close grained that it is not advisable to attempt to stain it; but its natural color when waxed or varnished is beautiful and cheerful—a rich golden hue. There are possibly many homebuilders who have seen Maple used in the home only in the kitchen where it is frequently scrubbed and becomes almost white. To those who have not seen it used elsewhere the thought that it can be made so attractive will come as a pleasant surprise.

The popular finishes for Maple flooring are: First, one application of filler and two coats of varnish rubbed to a polish finish; second, one coat of filler, one coat of shellac, sandpapered, and one application of wax thoroughly rubbed. When varnish is used, Maple flooring takes on a richer yellow and this color in turn is mellowed and deepened by passing years. In waxed Maple you get the full advantage of this wood's wonderful possibilities in polish. The artistic advantage of having color variations between the different pieces of flooring is well recognized as these slight contrasts serve to increase the naturalness and beauty of the floor.

Beech ana Birch Flooring Beech and Birch floors adapt themselves readily to a decorative scheme or a richer natural color or the colors which you can get from the use of stain. Each of these flooring woods has a pronounced grain and both will readily take and retain a fine stain and finish. They are highly recommended when a darker finish is desired to harmonize with the other finishes and decorations one has in mind.

Beech flooring is usually finished in the same manner as Maple, that is, by using one application of filler and two coats of varnish rubbed to a polish finish; or one application of filler, one coat of shellac, sandpapered, and one application of wax rubbed. Walnut or mahogany acid stain can be used if a color darker than the natural wood is desired.

When Birch is used, the range of possibilities is virtually unlimited. The beauty of the grain lends itself admirably to a natural finish or when finished with brown mahogany, walnut, or coffee brown penetrating stain. It fits particularly into the color scheme that calls for a dark motif in all decorations.

Waxed or polished, Birch produces an ideal floor.

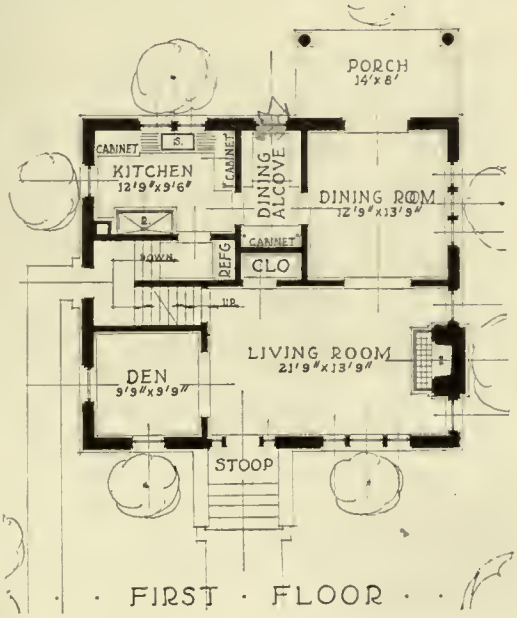


The Ashley

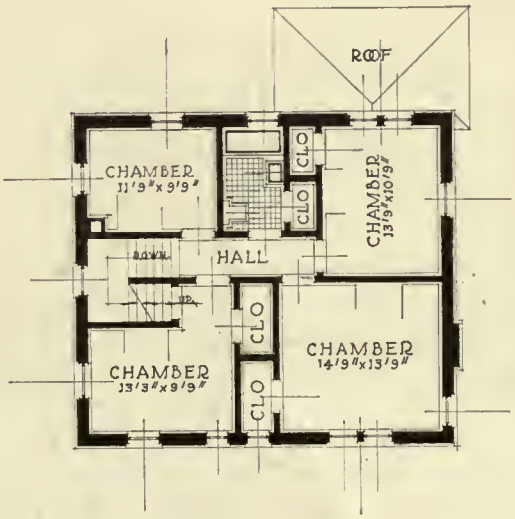
WHEN considering the style of house to construct you will make no mistake in selecting the square type as they can be constructed to give the maximum of space at a low cost. The attractive front entrance, good window arrangement and detail incorporated in the brick walls add to the attractiveness of this face brick design.

The entrance is directly into a large living room which contains French doors leading to the dining room. The stairway to the second floor also opens from this room with a door at the bottom. The arrangement of the service quarters is especially good. The kitchen contains good floor space for all fixtures and is connected with the dining alcove and refrigerator platform underneath the main stairs which leads to the cellar.

The second floor plan contains four bed-rooms, closets and large bath. Stairs opening from the left front bed room lead to the attic which contains good storage space. The size of this design is 34′ by 30′.



· · FIRST · FLOOR · ·



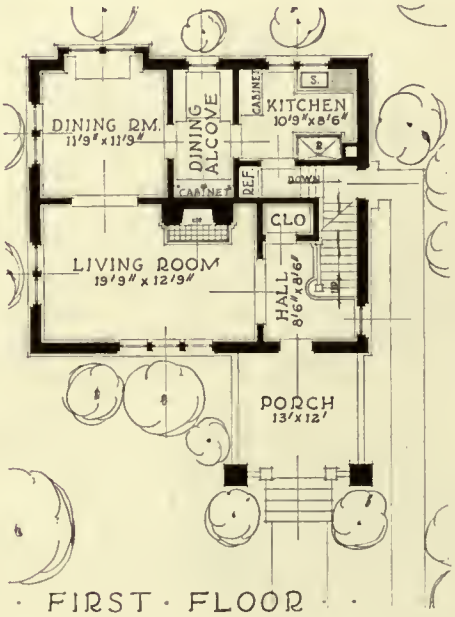
· · SECOND · FLOOR · ·



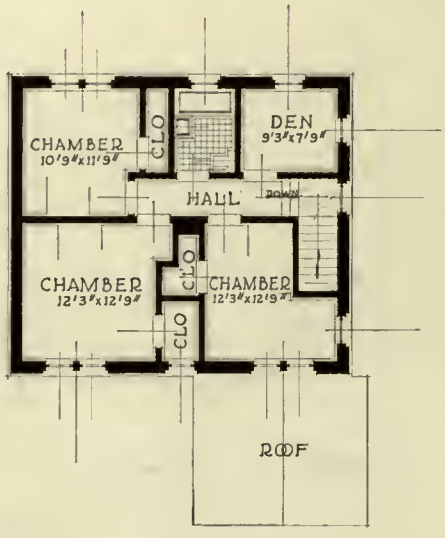
The Abbott

This home, though simple in design, contains an attractive exterior and a very practical arrangement of rooms. It can be constructed at a minimum cost owing to the fact that all unnecessary detail has been eliminated.

The front door opens from the porch into a comfortable hall containing a good sized closet for outer wraps and semi-open stairs leading to the second floor. The living room is well proportioned and contains cheerful fireplace and good window arrangement. The projection of the back wall in the dining room has two small windows constructed high enough from the floor to allow a buffet to be placed in this recess. Dining alcove with china cabinet, kitchen and combination grade and cellar stairs complete the first floor plan. The second floor plan contains three bed rooms each with a good sized closet, large bath and den. The size of this face brick home is 30′ by 25′.



· · FIRST · FLOOR · ·



· · SECOND · FLOOR · ·

A Guide to Good Construction

(*Continued from page 25*)

it is easily worked and stands well. Shrinkage, 3 per cent; warps very little; durability, moderate; works easily in every way; splits easily but nails well." White pine takes and holds paint very well.

Redwood: "Use determined largely by durability; burns with difficulty; shrinks little; warps little; very durable; easily worked; splits readily; takes nails well." This wood is finding very popular favor for both exterior and interior woodwork owing to the fact that the first grades can be obtained in very large quantities. We particularly advise its use on any home whose exterior walls are to be covered with wide siding of Colonial pattern. This treatment is usually handled without corner boards and owing to the fact that there is no shrinkage to this wood it may be mitered at the corners with very little possibility of cracks appearing at the joints. It takes and retains paint especially well.

Cypress: "Use determined largely by its durability. It is said that there are 90,000 fresh water cisterns in New Orleans made of cypress. Shrinkage, 3 per cent; warps but little; likely to check; very durable; easy to work; in splitting crumbles or breaks; nails well." Cypress takes and holds exterior stains and paint very satisfactorily.



Millwork WHEN selecting the interior and exterior millwork for your home let quality be your only guide for upon this part of your project depends much of the success of a satisfactory home. Millwork on the interior of a home really means all that part of the exposed finish and built-in fixtures with the exception of the plastered walls. On the exterior it covers such items as porch columns, porch balusters and rail, window blinds and screens, sash, doors, etc. It is often quite possible to cover up defects in the framing or any inclosed portion of the construction but there is little opportunity to repair poor quality in millwork. The most beautiful home can be ruined by inexperience or poor judgment in the selection or properly manufactured sash and frames, moldings and built-in fixtures. As stated before, your only guide in the selection of these materials can be said to be quality. So many disappointing things will creep into your building project through the use of poorly constructed, unseasoned millwork that it will be money well invested to select the very best obtainable from the most reputable manufacturer in your territory.

The faults of poor millwork are common and it is easy to believe that homebuilders who, in a great many cases, invest the savings of a large part of their lifetime in a home, certainly are not interested in window sash that bind or rattle in the frames, doors which swell or shrink so that the latch will not catch in the strike, in cupboards and buffets which have doors and drawers which bind and sag, casings, base and moldings with a raised grain or porch columns which, after being exposed to the elements a few months, crack open at the joints and warp to such an extent that they lose their original shape. These and many other things are the result of error on the part of the homebuilder in not giving proper consideration to the selection of these materials.

No interior finish of any kind should be delivered until all plaster has been dried out and you have a clean, dry place in which it can be stored until installed and a preservative of oil, paint or varnish applied. All lumber used for interior finish and millwork is kiln-dried and when manufactured contains a very small percentage of moisture. It naturally has a tendency to absorb moisture which will raise the grain, loosen veneer, weaken glued joints and in a general way materially affect it unless extra precaution is taken to keep it in a dry place. Reputable manufacturers of millwork are materially interested in the success of your building project, and make special efforts to deliver their materials to you in the best possible condition. Their success after you have received them depends largely upon the way they are taken care of.

The kinds of woods best suited for interior millwork will, of course, depend upon the furnishings you are going to use and the finish desired to make it harmonious. Lumber for good millwork should be considered in a great many ways the same as lumber for good furniture which means that the hardwoods are preferable, by far. In another part of this book we have explained in detail the value of using hardwood flooring. What has been said in regard to oak, maple, beech and birch flooring applies in a large measure, to interior millwork and trim. Of these hardwoods, oak, no doubt, is the one most commonly used owing to its natural beauty and character. It is very serviceable and lends itself admirably to any of the many popular finishes. Birch is extremely popular for interior trim especially for veneered doors and is particularly desirable when a mahogany finish is preferred.

Soft woods are considered by some homebuilders to be satisfactory when the woodwork is to be enameled or painted, but there is always the possibility of its marring and owing to the fact that the grain in a large number of soft woods will raise easily they sometimes require from five to six coats of paint and enamel in order to have a satisfactory covering.



Built-in Fixtures and Space-saving Equipment CONSIDERABLE convenience can be added and space saved in the modern small home by well planned built-in fixtures. Kitchen cabinet, pan cupboards, buffets, china cabinets, linen closets, etc., all add to the practical arrangement and convenience of a home and in most cases are much more desirable than the movable type of fixture. Built-in fixtures often utilize space between walls, under stairs or in corners which otherwise would not be practical to use to advantage. They should be designed so that they will be in proportion to the room in which they are constructed and should supply a convenient storage for articles used in that room.

Vestibule IN the vestibule or hall a built-in wardrobe forms a convenient place for outer wraps and is practically indispensable, especially in locations where overcoats and umbrellas are used the greater portion of the year. In the hall a low built-in seat with a hinged top forms a convenient storage for over-shoes, rubbers, gloves, roller skates, etc. If the vestibule will not allow both fixtures a drawer designed in the lower part of the wardrobe will take the place of a built-in seat.

Living-room THE possibility of built-in fixtures in the living room is limited to bookcases designed on either side of the fireplace or in the corners of the room where they not only conserve space but add to the cosiness of its appearance. Wide, low windows and the present popular use of low radiators suggest a practical place in which built-in seats can be constructed.

Dining-room IN the dining room a built-in buffet or china cabinet is sure to be appreciated. Every well planned home should contain wall space for at least one of these convenient fixtures. A china closet designed in a corner of the room is very practical and often occupies what might otherwise be dead space. The windows and radiators in this room also suggest the use of built-in seats.

Kitchen THE kitchen, more than any other room in the home, offers possibilities for built-in fixtures which, when properly designed not only add to the appearance of this part of the home but supply a practical, handy place in which household utensils are stored. Kitchen cupboards, pan cupboards and broom closets save countless steps in the course of a day's work. A well planned kitchen should also contain wall space for a patent kitchen cabinet. These handy cabinets are to the housewife what the tool chest and work bench are to the mechanic. They are designed with a "place for everything and everything in its place" convenient and sanitary.

Bathroom WHEN planning the bathroom many things must be taken into consideration in order to have this part of your home attractive and convenient. Much hard usage is imposed upon this part of the home, but with some thought it can be made and kept spotlessly clean and beautiful. To be out of the way and yet convenient the medicine chest should be built in the wall; it provides a place to hold simple medicinal remedies and toilet articles. This fixture is usually designed with a mirror door. A linen-closet designed in this room is very acceptable but not always possible, owing to the limited space, in which case it should be placed as convenient to the bathroom as possible in the connecting hall.

Considerable improvement has been made in bathroom equipment in the way of built-in fitment as well as standard fixtures. The Fairfacts Company of New York City manufacture a complete line of china built-in bathroom fixtures which eliminate the possibility of a bathroom being cluttered up with screwed-on or portable fixtures such as soap dishes, toothbrush holders, towel racks, etc. The Fairfacts bathroom fixtures are designed to be





constructed into the wall and are permanent. Their line of accessories is complete to meet all conditions. Soap holders, tumbler holders, paper holders, built-in electric radiator, towel bars, tooth-brush holders, brackets for glass shelves and many other little conveniences will furnish the finishing touch to your bathroom.

Closets It has often been said that the practical way in which to plan a home is to design it around a cheerful fireplace and large closets. No home is complete unless proper thought has been given to convenient closets. Large, roomy closets are a valuable asset to every home. They should supply storage with order and convenience. Closets may be made much more effective and convenient by lining the interior with cedar. This eliminates the necessity of packing and storing away garments in some sort of cedar box or chest or cramming them into trunks with moth-balls or chemicals used to eliminate moths. The E. L. Bruce Company of Memphis, Tennessee, make a specialty of manufacturing cedar material which is marketed under the trade name of "Ceda'line" for the purpose of lining closets and wardrobes. This material is highly recommended and will be appreciated by every housewife.

A modern closet must also have proper fixtures for hanging clothes. The old method of nailing a coat strip around the inside of the plastered walls and filling this with ordinary coat hooks has never been very satisfactory. Closets are usually constructed in places which cannot be used for any other purpose and in a great many cases are dark and unventilated. The Knape and Vogt Company of Grand Rapids, Michigan, manufacture a very high class product which not only adds to the capacity of the closet but makes it much more convenient to remove or replace garments. The equipment consists of a full nickel ball-bearing carrier which operates noiselessly and without friction on a track or slide. This fixture accommodates all the apparel that is usually spread around on hooks in the ordinary closet and is a great saver of space. No light is necessary in the closet, for when the door is open the carrier can be pulled into the room and the garments selected or hung in place with little effort.

Metal Weather Strips

(*Continued from page 75*)

detail here respecting the life of this device and the guarantee its makers give their clients, for the reason that too many people when contemplating the building of a home either think of this protecting device as non-essential, or neglect to consider it at all in their building program. Even from a money point of view alone it is doubtful if a better investment can be made in anything that enters into the construction of a home than the Metal Weather Strip.

It is not necessary to remind anyone of experience how, on a cold, windy day the cold air pours into the house from the windward side and how the hot air pours out on the opposite side. And all the while, on these blustery days, the shovel in the basement is working overtime to keep up this costly unequal fight. And that fight will be waged annually as long as you neglect to seal in the heat and seal out the cold with Metal Weather Strips.

The weather-strip principle applies to the doors as well as to the windows, and any installation is incomplete unless the doors are included, as the average door admits as much air under pressure as three windows.

In summing up the advantages of the weather-strip installation permit us to urge upon our readers as we have done so often before, and as we will do many another time before we make our final bow, that economy is not a matter of initial cost. It comprehends many items that cannot be reckoned concretely in dollars and cents. But in the instance of the Metal Weather Strip it is not necessary to invoke those things which find sole value and compensation in appearance, convenience and comfort. We make our recommendation, in this case, on a flat basis of dollars and cents. In two years they will save their initial cost in the elimination of waste and fuel. For the rest of their natural lives, which is the life of the building in which they are installed, the saving they will effect will represent dividends on returned capital. We unhesitatingly recommend the installation of the metal-strip, and because of our experience with the products of the Detroit concern we give our unqualified endorsement of their metal weather strip.

The cost of installation is inconsiderable, and the benefits, other than those of ultimate economy, are so numerous that we believe it folly to omit from any homebuilding program just another one of those items which distinguish the house from the home. And more especially does the omission appear in the light of folly, when through a period of five years, the investment is not only a money-saver but a money-maker.

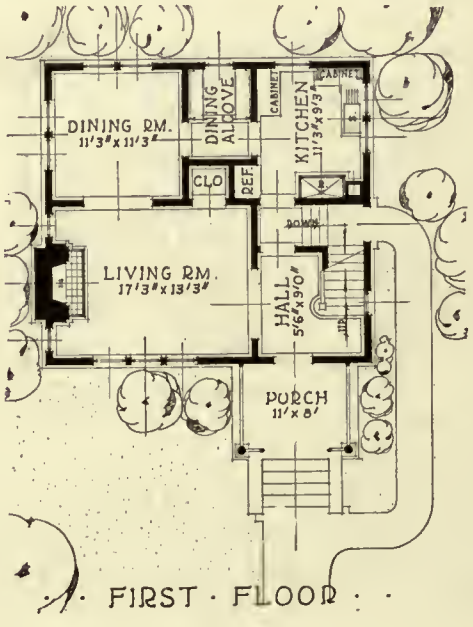


The Berwyn

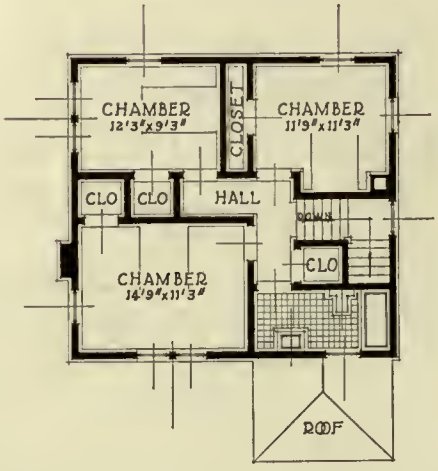
THIS attractive two story house is designed along Colonial lines, and due to its simplicity, can be constructed at a minimum cost. It is 28′ wide by 26′ deep with 11′ by 8′ front porch and is suited for a narrow lot.

On the interior every foot of floor space is used to advantage. The entrance hall contains semi-open stairs, which lead to the second floor, and direct connection to the kitchen by a passageway under the stairs, which makes a convenient step saver.

Cheerful fireplace with high casement windows on each side and triple window add to the appearance of the living room, which connects the hall and dining room with French doors designed in pairs. Dining alcove and well arranged kitchen with convenient refrigerator space complete the first floor plan. The second floor contains large bath, three well proportioned bed rooms, each with cross ventilation, and closets.



· · FIRST · FLOOR · ·



· · SECOND · FLOOR · ·

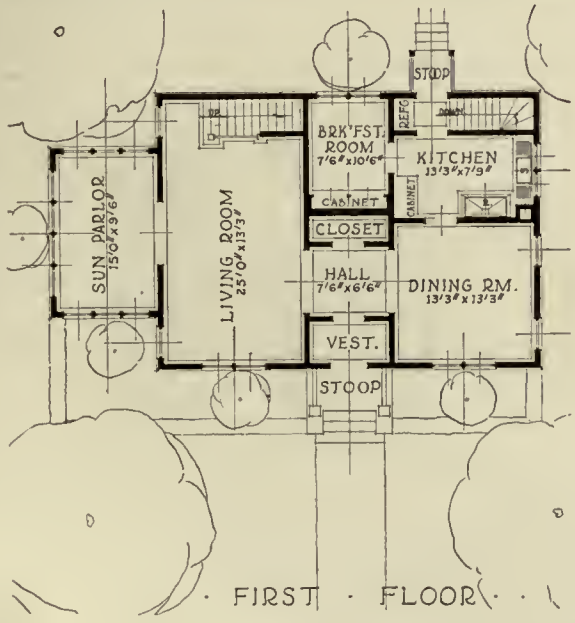


The Lancaster

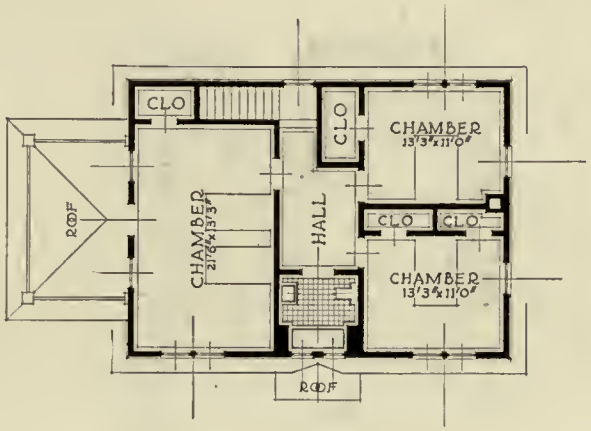
MANY homebuilders hesitate to tackle the building problem single-handed. Your membership entitles you to expert advice in every step of planning and erecting a home of your own. All designs shown are actual photographs of homes which have been planned and erected.

This Dutch Colonial home, with first story walls of Portland white cement stucco forms a very pleasing contrast to the stained wood shingles which are used for covering on dormers and gable ends.

The hall with French doors on each side separates living room and dining room. A cheerful sun parlor opens off the living room. Large breakfast room with china closet off the kitchen will be appreciated by the owner. The cellar stairs and refrigerator are located convenient to the rear entrance and kitchen. A master bedroom and two smaller bedrooms open off the upstairs hall, which with three closets and bath, complete this floor. This design is 46′ wide and 26′ deep.



· · FIRST · FLOOR · ·



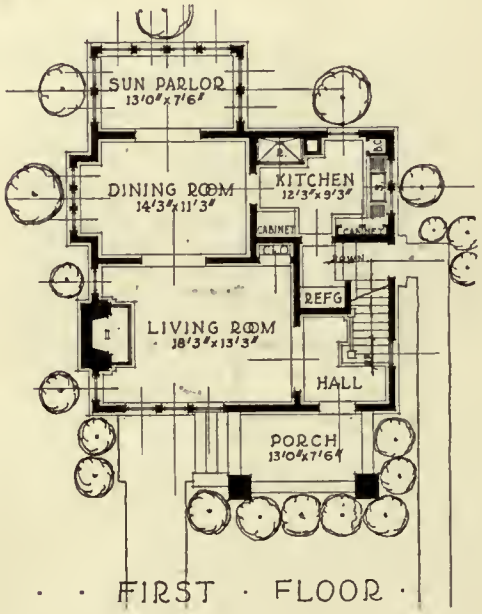
· · SECOND · FLOOR · ·



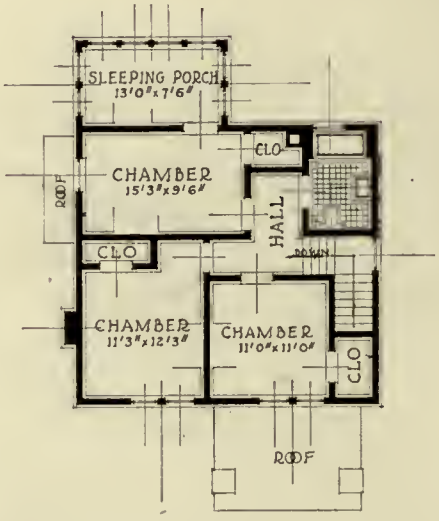
The Hillsdale

A WELL proportioned square home with attractive exterior. The appearance of durability and strength are increased by the large brick columns supporting the porch roof. By using white or cream cement stucco for the second story walls a pleasing contrast is formed to the lower walls of wide siding stained or painted a dark brown.

The floor plans show a very pleasing and convenient arrangement of rooms. Upon entering one is immediately impressed by the appearance of the hall with its semi-open stairs, and from where you may obtain a fine view of the living room and dining room through the openings, which are equipped with French doors hung in pairs. The sun parlor opening off the dining-room adds to the comfort of this design. Grade cellar stairs and refrigerator platform connect the well arranged kitchen. Three bed rooms, each with a good closet, sleeping porch and bath open from the upper hall. Size 28′ x 26′.



· · FIRST · FLOOR ·



· · SECOND · FLOOR · ·



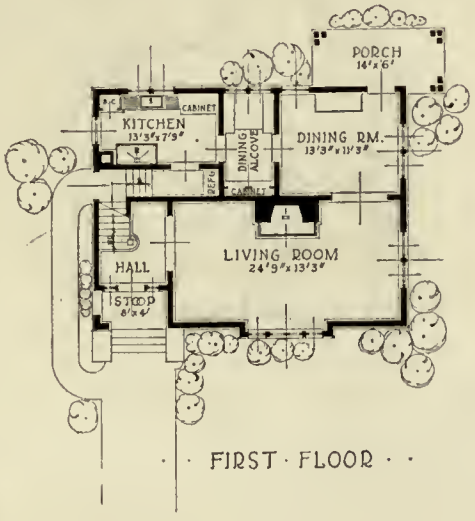
The Wooster

THIS beautiful home with its distinctive features has many admirers. The bay window projection, dormer and inset entrance relieve the straightness of its general lines. This house is 34′ wide and 26′ deep with the rear porch extending out about 4′ from the side wall.

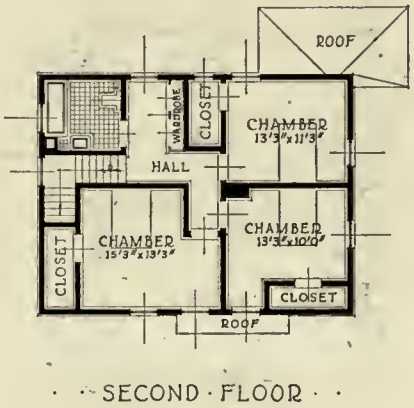
The entrance to the porch which is 14′ wide and 6′ deep is from the dining-room. The position and size of the porch can be changed very easily.

The living-room which extends across the front is unusually large for a house of this size. French doors in the openings from living-room to dining-room and hall together with large fireplace add to its cheerfulness. Between the dining-room and kitchen is a dining-alcove. The space underneath the main stairs is used for refrigerator platform and a grade cellar stairs. From the hall an attractive staircase leads to the second floor which has three large bed-rooms with closets and bath.

In designing this home a great deal of study and thought were given, resulting in an unusual work of architecture that has simplicity, beauty and good taste. A place anyone would be proud to call "Home."



FIRST · FLOOR



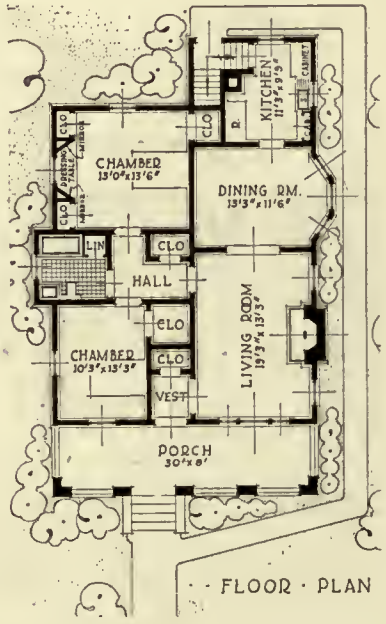
SECOND · FLOOR



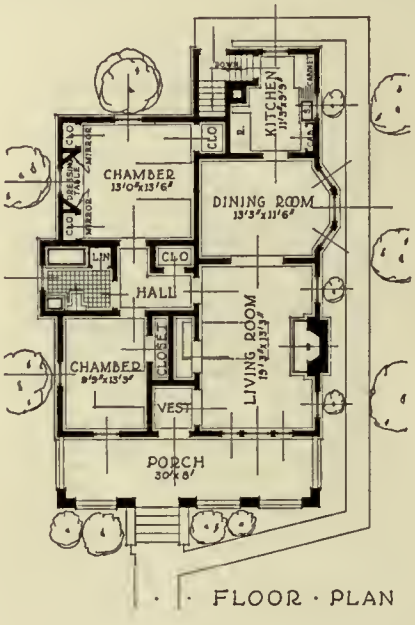
The Santa Rosa

THE home illustrated above is the result of a very satisfactory combination of low pitched hip roof, wide projecting eaves and shingled side walls. The large inset porch and bay window projection add to the exterior attractiveness. A choice of two floor plans is illustrated, they being identical with the exception that plan "B" on the right has a Murphy Door Bed installed in the closet off the living-room, which gives this plan three bed-room efficiency at a very small additional cost. This closet also provides room for wraps.

A hall opening off the living-room gives the necessary privacy to the sleeping chambers. A good sized bath with a medicine chest and linen closet is also on this side of the plan. The plan is completed by the dining-room and kitchen. The size of both plans is 30′ wide and 44′ long, which includes the 8′ projection of the kitchen.



FLOOR · PLAN



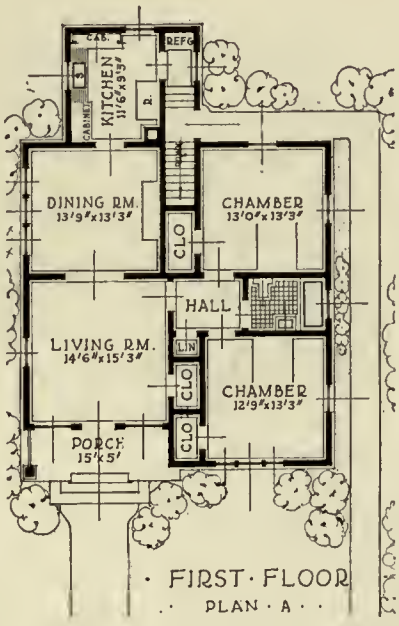
FLOOR · PLAN

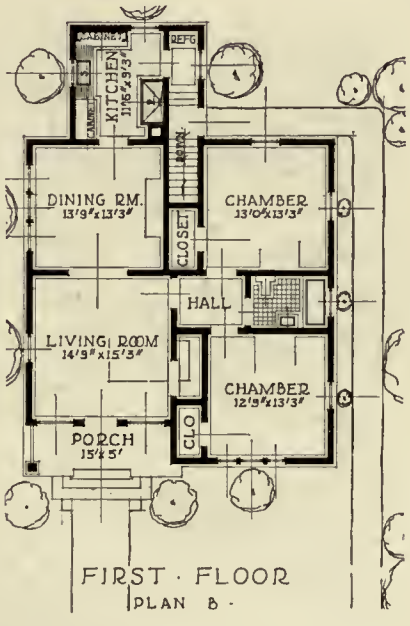


The Marysville

This small home is artistically designed and is a departure from the usual one story house. The size of the floor plan is 32′ wide and 34′ deep with a 12′ by 14′ addition on the rear. Two floor plans are shown which are identical with the exception that in plan "B" the closet off the living-room has been equipped with a Murphy Door Bed but still leaves considerable hanging space for outer wraps.

The living-room and dining-room, which are connected with a pair of French doors, are of good size and well lighted. A small hall opening off the living-room separates the bed-rooms and bath from the main part of the house. The rear entrance is at the grade line where a stairs leads to the basement and up onto a convenient platform for refrigerator. The kitchen is well planned and contains all the desired features necessary to please the modern housekeeper.





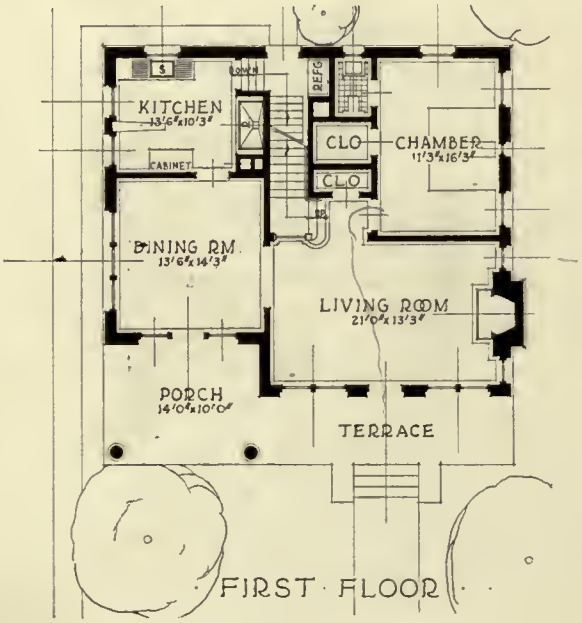


The Aberdeen

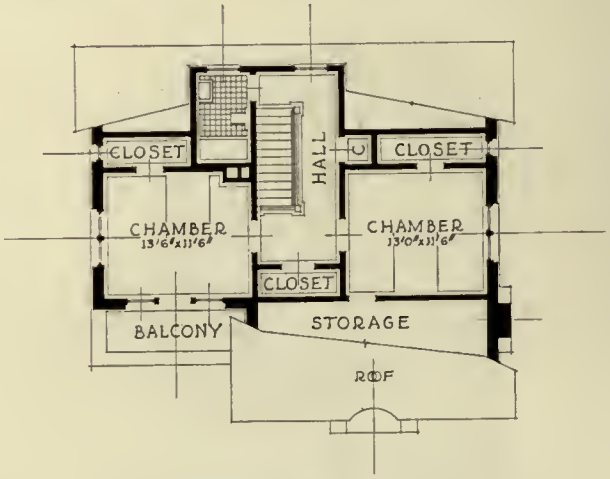
This simple, formal one and one-half story brick home will fit nicely on a lot with a frontage of about 60′. It should preferably face the east for the morning sun in the living room and dining room. An attractive entrance and pergola porch add considerably to the front perspective.

The first floor plan contains living room, dining room, kitchen and bed room. A recess off the living room contains a coat closet and also the open part of an attractive stairway. The bed room contains a large closet and lavatory and is designed to accommodate twin beds. Suggestions for all modern conveniences are shown in the kitchen layout, even to a handy place for a refrigerator, located on the platform leading to the cellar.

On the second floor the bath opens off the hall at the head of the main stairs. Two bed rooms with large closets complete this arrangement. Size 32′ x 37′.



FIRST FLOOR



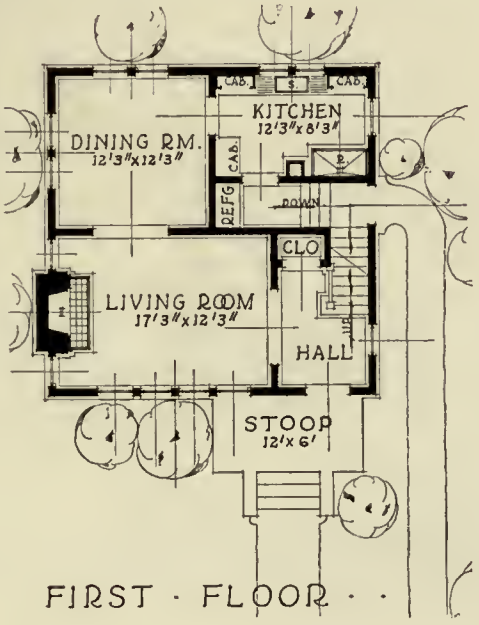
SECOND FLOOR



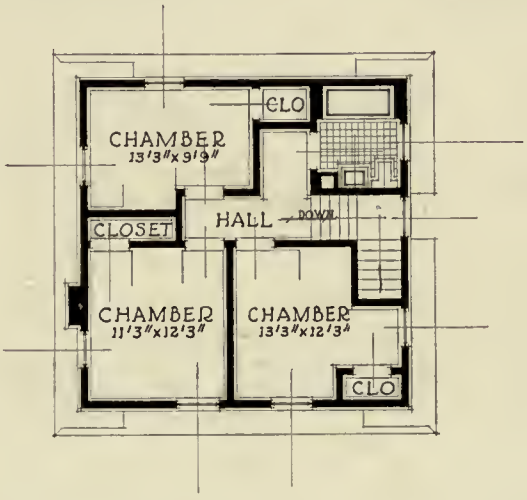
The Homestead

THIS attractive design contains a suggestion of French architecture. By carrying the roof projections and the gables down to the top of the first story walls, it gives the appearance of a one and one-half story design, but all rooms on the second floor contain full height to the ceilings. A pleasing contrast is formed by using siding for the first story outside walls with shingles on the gables and dormers.

This home is 26′ wide and 26′ deep and fits admirably on a small city lot. It is complete in every detail, containing living room, dining room, kitchen, hall and coat closet on the first floor and three bed rooms with closets and bath on the second floor. Cellar stairs and refrigerator platform are located under the main stairs, which also has a side entrance at the grade. This home is planned for full basement, containing heating plant, fruit room, coal bin and laundry.



FIRST · FLOOR · ·



· · SECOND · FLOOR · ·

LANDSCAPE GARDENING

How to Plant and Care for Lawns, Trees, Shrubs and Flowers

THE interest of your Society does not stop when your home has been erected, but ever bearing in mind the many discriminations to be made in the locating, adorning and surroundings of the home, the Landscape Department was early established to advise or direct this part of home making. As we have often said, it is the use of such skill that changes a place to stay,—a house, to the dearest place on earth —a Home.



Perhaps you will find it difficult to express your tastes as you feel them when it comes to the arrangement of an artistic exterior. You may not be sure of yourself. Right then is where our Landscape Department can help, as it is organized and maintained for a single purpose—to serve our members. By furnishing the department with the necessary information regarding size of lot, position and direction in which the house faces, nature of soil, etc., sketches will be worked out for attractive planting of shrubberies, plants, trees, etc. with lists of seeds and vines.

It is the intention of the Society to make this part of our Service as complete as possible, giving practical information dealing with the home maker and amateur gardener. Careful study and planning before beginning will have much to do with results accomplished along this line—developing the exterior of the home.

The beginning of a garden is about the most important part of it, for unless the beginning is good, all that follows will fall short of the excellence which should be obtained. Well begun, a truly beautiful garden is possible almost anywhere, even within a decidedly limited space.

The real beginning of a garden, especially on a small place, lies away back of the time when the initial steps toward making it are taken. However, this is the stumbling block lying in the way of everyone who has not given the subject of his garden making more than an average thought. The design, size and beauty of all small gardens depend almost entirely upon the position and plan of the home of which they are a part, hence such a garden's beginning in the truest sense is contemporary with the planning and locating of the house.

The term "garden" does not mean an acre lot full of vegetables, nor even an open space full of flowers, but rather that part of the grounds adjacent to the house which is treated in a manner to display it to its best advantage. The garden is that part of a home which gives it a true artistic appearance and is, therefore, a characteristic partly natural, partly conventional. Some attempt at an attractive treatment of the grounds is almost always made by the homebuilder and the tendency today is to discuss the placing of shrubs, flowers and paths so as to best display the good qualities of the building and to mask, as far as possible, its weak points.

No house, however small, should be left without some serious effort at arranging the surroundings to harmonize with the house. These may be of the smallest description, a few shrubs, vines against the house and some small trees, or, as is the case with some of our large country houses, the surroundings may be treated for miles to lead up to the heart of the whole, the house of the owner.

The exterior of your house is far more important than the interior. It is seen first and last and by more people. Whether large or small, old or new, the attractive yard takes the leading part of a charming home.

One of the most important features of a city home or country estate is a well kept lawn. You may have flowers in profusion, and great forest trees in just the right location, but the thing which really adds to the beauty of the home is a smooth, velvety lawn.

It would be impossible to give detailed information regarding the preparation of the soil and planting of trees, flowers, shrubs and other garden plants suitable to all our varied climates, nor will one planting scheme be suitable for all our different houses, but suggestions will be made as to exterior decorations which we hope will be helpful to our members.

Lawns No matter how much care is exercised in the selection and planting of flowers, shrubs and trees, the beauty of a garden depends mostly on the lawn. Who has not been captivated by the lengthening shadows over an unbroken area of closely cut grass in the late afternoon of a bright summer day? The glory of magnificent parks and boulevards are great lawns stretching away into mazes of shrubbery and woodlawn.

What might be termed a corollary to a good lawn are perfectly kept sidewalks and drives. The beauty of each is enhanced by the perfect condition of the other. Walks should be properly placed, accurately

edged and above all things, constructed so as to make them hard and pleasant to walk on.

To the thousands of anxious inquiries seeking solutions of lawn difficulties, it would be more than delightful to say that a fine lawn could be had by very hard wishing, but honesty compels one to change "hard wishing" to "hard work." A well made lawn is a very good testimonial to a hustler and one who takes pride and comfort in his home.

The majority of inquiries about lawn needs come from people having property ranging from a few hundred to a thousand feet, and the symptoms described can be divided into two classes: one where grass has never grown before, and the other where the call is for information to assist in restoring old lawns that have petered out. The first condition is the only one that will be of value to new builders, but we will also discuss the second for future reference.

What is the secret of having a good lawn? If we are about to make a new lawn, much care must be given to the proper preparation of the soil. The ground should be plowed or turned over with a spade and thoroughly worked so that the grass roots will have ample opportunity to take hold and not dry out in the baking hot days of midsummer. Start the preparation for a new lawn in the Fall if possible, for during the winter the frost will greatly improve conditions, killing the weeds and mellowing the soil as nothing else can.

A very grievous mistake is often made by trying to construct a lawn on the wrong kind of a foundation. There should be at least six inches of clay under your black dirt in order to hold the water up near the grass roots. It is almost impossible to have a satisfactory lawn where the "fill" is composed entirely of sand, ashes, etc., because this acts as a drain to carry the water away from the grass.

A liberal application of good manure should be incorporated in the soil, as it supplies moisture retaining properties which are invaluable. Before sowing the grass seed a liberal application of bone meal and wood ashes or lime should be worked into the surface thoroughly. Then on a calm day, sow the seed thickly and after raking it in, roll well several times with a good hand roller until the surface is perfectly firm and smooth.

Lawns made in this manner are ready for use almost as soon as a lawn made from sod, and the results from seed are infinitely superior. For a new lawn, use one quart of seed to three hundred square feet.

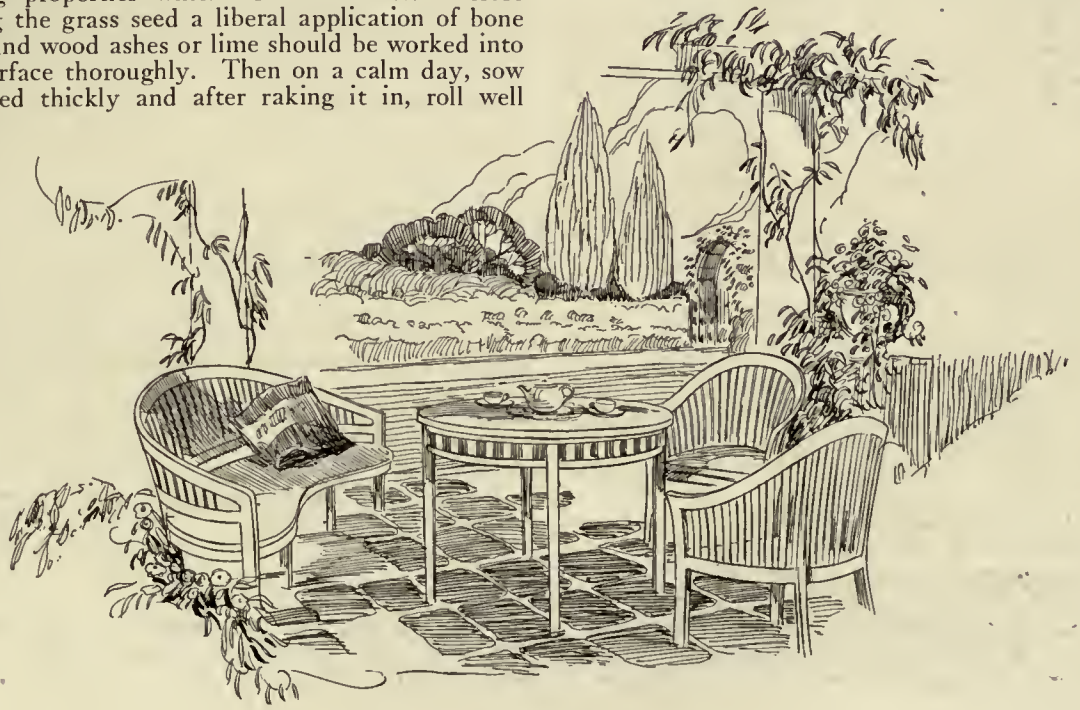
No lawn can reach perfection on sour, wet soil. If these conditions exist, the ground must be drained with tile before there can be hope of success. Plow it, lime it and allow it to lie rough all winter.

After all heavy rains, especially during the hot summer months, a careful rolling is of greatest benefit to a lawn. It not only makes the surface even and so perfects the work of the mowing machine, but also firms the ground and discourages the ravages of insects. Rolling also saves much wear and tear on the mowing machine that comes from shoving it over hard, lumpy ground.

Restoring Old Lawns WHERE grass has grown for some years, it is conclusive evidence that there must be soil beneath, which, perhaps because of neglect, has ceased to supply the nourishment necessary to maintain the vigor of the sod grown upon it. As a consequence, weeds gradually creep up and finally crowd out every blade of grass. A condition like this is easily remedied and an improvement brought about in short order at a very small expense. In the first place, make a general cleaning up of the weeds and do it as thoroughly as possible. Take them out with a strong knife, cutting deep into the ground. An asparagus knife is the best for this purpose.

If the places under treatment were to be spaded up, this weed cleaning with the knife would not be necessary but the object in this instance is to disturb the soil as little as possible.

With the weeds out of the way, go over the whole place with a sharp rake and scratch the earth



to the depth of half an inch. In doing this, remember not to be too severe on spots where there is any grass growing, applying the rake lightly here. After the raking, sow grass thickly and evenly, raking it in, and finish by raking, watering and rolling. Be sure to roll heavily, water regularly, and good results will surely come.

If, however, you should find that the ground shows patches of moss and sorrel, the treatment just suggested will not apply. The land is probably sour, and should be plowed up, limed and allowed to lay rough all winter. Use about 1½ bushels of air slacked lime to a thousand square feet.

On small places where the necessity for radical treatment is apparent, yet where it is not advisable to upset the premises at that particular time, results can be reached in a way that will be effective.

Take a round stick about one inch in diameter and sharpen one end to a point. At frequent intervals about the grounds drive the stick to a depth of about 18 inches and into these holes ram a mixture of finely powdered manure, hardwood ashes and bone meal. Cover the holes with leaves. In a short time the good effects will be noticeable and during other seasons the same treatment can be extended to the parts not touched before.

Grass Seed While many people can talk freely on the preparation of the land for lawns, they are not so confident on the treating of grass seed. It seems strange that this is the case when so much depends upon the suitability of the grass seed to the land for the making of a successful lawn. There is, however, just as much individuality in a plant produced from a grass seed as in the choicest plant in a greenhouse. One kind of grass seed will produce a low growing plant, while another grows high; one wants a moist location, and another thrives in a dry place; some will germinate in the shade, others will not. If a person knows each kind and its requirements, he will be able to choose the grass best suited for his soil and location. If you are spending considerable time grading and preparing your lawn it would be advisable to secure a sample of each kind and make a number of small patches in different places on your plot. Then use the one which shows the best results under all conditions.

Kentucky Blue-grass—Fine for lawns; grows slowly, but vigorously, almost everywhere but in an acid soil.

Red Top—Shows results more quickly than Blue-grass; will thrive on sandy soil; fine when mixed with Blue-grass.

English Rye Grass—Grows quickly and shows almost immediate results; good in combination with slow growing Blue-grass.

Various-leaved Fescue—Good for shady and moist places.

Rhode Island Bent—Has a creeping habit; good for putting-greens, sandy soils.

Creeping Bent—Creeping habit good for sandy places and to bind banks or sloping places. Combine with Rhode Island Bent for putting-greens.

Crested Dog's-tail—Forms a low and compact sward; good for slopes and shady places.

Wood Meadow Grass—Good for shady places; is very hardy.

Red Fescue—Thrives on poor soils and gravelly banks.

White Clover—Good for slopes; not to be recommended for a lawn.

Sheep Fescue—Good for light, dry soils.

Now with the above information you will have sufficient knowledge as to the kind of seed to draw from to make combinations to fit any situation.

If you should go to a dozen people and ask them to suggest a combination of seeds, they would all give them to you, but no two proportions would be alike. If you should ask for a single grass the majority would suggest Kentucky Blue-grass. For a single grass there is nothing better suited for all conditions. There is one objection to it, however. You cannot plant it today and have a lawn next month. If you can afford to wait, sow Kentucky Blue-grass and your patience will be well rewarded. It makes a permanent lawn.

To introduce a ready-made lawn, use a combination of Kentucky Blue, Red Top and English Rye. The first month will see the newly seeded space a carpet of green. In time the Rye passes, the Red Top continues to cover, while the Blue-grass grows sturdier each day until it crowds everything out by virtue of its own strength. Use twelve pounds of Kentucky Blue-grass, five pounds of Red Top, and three pounds of English Rye to the bushel, and sow 3½ to 4 bushels to an acre. This makes a reliable combination. It is common to hear people ask for grass seed that will grow in shady places, but it is always difficult for the dealer to determine the degree of shade. A place may be shaded, but yet suitable for growing grass, and it may be shaded so that no seed known would grow there.

In places where there is no heavy dripping and where the ground is not absolutely dark, use the following:

Kentucky Blue-grass, Wood Meadow, Various-leaved Fescue and Crested Dog's-tail. Use about 35 per cent of the first two and 15 per cent each of the last two.

For conditions that require a quick growing grass and something that will bind and make a holding upon slopes under difficult conditions, the following is recommended:

Kentucky Blue-grass, 30 per cent; Rhode Island Bent, 30 per cent; Creeping Bent, 25 per cent; Sheep Fescue, 10 per cent, and White Clover, 5 per cent. This is one place when White Clover is essential. Under this condition it fulfills its duty perfectly. While all other kinds named may not flourish, there will be enough of each to make the combination successful.

Never buy grass seed by the bushel. Buy it by weight, or state that there should be so many pounds to a bushel. It may cost you a high price, but it will be far cheaper in the end than to buy something inexpensive that will have a lot of sweepings and useless bulk. Use the very best seed you can obtain.

Sowing the Seed Grass is nothing but a collection of thousands of little plants crowded together, which must have nourishment and from which the weeds must be taken. Likewise the soil

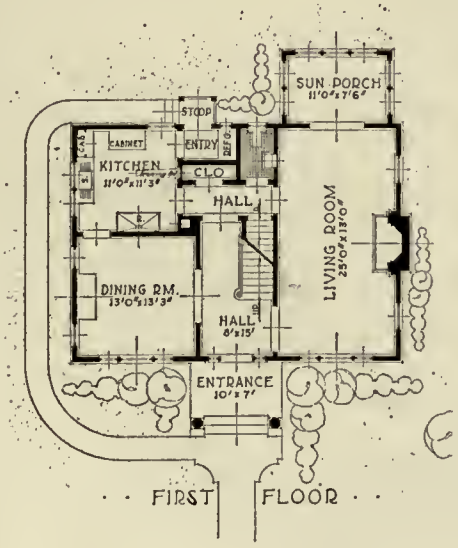


The Jackson

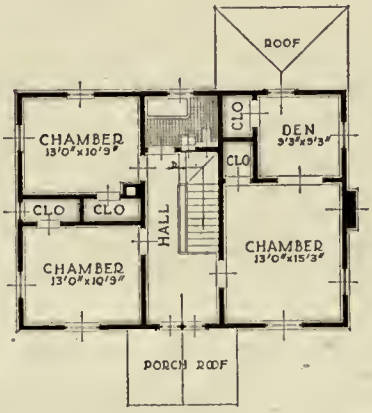
THIS beautiful home with its siding painted a pure white with solid panel shutters and seats on each side of the entrance painted green is a sight which charms and attracts the passer-by.

The size of the house proper is 36′0″ wide by 26′0″ deep, not including the sun parlor addition, which is 12′0″ wide and 8′0″ deep. The living-room is especially worthy of mention because of its generous size, arrangement of windows and cheerful fireplace. Connecting the main hall on the left by a pair of French doors is the dining-room, at the rear of which is the kitchen. The rear entry off the kitchen provides a convenient location for a refrigerator. A desirable feature is that the rear hall connects with the living-room, downstairs lavatory, kitchen and front hall, saving many steps in the performance of household duties.

The second floor plan provides for three bed-rooms, a good-sized bath and ample closet space. On the rear of the large bed-room on the right is a room that can be used for nursery, upstairs living-room or den.



FIRST FLOOR



SECOND FLOOR

must be given water as it is needed, and the earth must be made mellow for the roots, to a good depth. It makes no difference how much you pay for your grass seed, how good or how bad it is, or what kind of fertilizer you use, if the bed is not properly prepared in the first place grass plants will not grow or if they do, will not thrive.

It is quite a trick to sow grass seed evenly so that it will germinate without giving the plot a spotty effect. It should be spread at the rate of about three bushels to an acre, and this sowing can be successfully done only on a quiet day. Even a very light wind is liable to pile up your seed on your neighbor's lot as on your own in places not wanted. Keep the seed in a pail while sowing, and after taking a handfull, bend close to the soil and let the seed feed through the fingers as the arm swings back and forth in a semi-circle. This is very much easier to say than to do, but a little experience will make one quite proficient. To help still more, sow the seed two ways at right angles to each other. After sowing rake lightly and then finish by putting a heavy roller over it.

While thick sowing has the advantage of discouraging a growth of weeds, there is a limit that cannot be safely passed. Seed sown too thickly will mat and damp out, leaving great bare patches on the lawn.

Spring sowing should be done just as soon as the frost is out of the ground. This early sowing gives the young grass a chance to establish itself before the severe summer heat comes on. Careful watering is necessary, with a fine spray, and if regularly done will induce rapid germination. In watering, do not wash out the seed by too heavy a stream.

Young grass should not be cut before it is three inches high, and this means that a scythe should be used in preference to a lawn mower, as it is difficult to get the blade high enough to allow this length. In cutting for the first time try to do it on a cloudy day, as this will prevent any possibility of scorching or burning. After a few weeks the grass will become toughened and will be beautified by frequent cutting about every 5 or 6 days.

The roller should be used after every cutting if possible and although it may, seemingly, be working injury by crushing down the tender grass, it is really making sure a solid and compact sod. In the middle of the summer when the sun is very hot the grass should not be cut close, as the roots are liable to be killed by the sun.

When cutting your grass you will find it a great saving to have some sort of a grass catcher on your lawn mower. One can be made easily, but a very handy one can be purchased for about fifty cents. They prevent the wear and tear on the lawn by hard raking. If you prefer to rake use a wooden one, as iron teeth damage heavy sod. When the grass is cut often the clippings may be left on the ground, but heavy cuttings should always be gathered up.

Good Loam and Fertilizer

Good loam is scarce. In the Fall when the leaves are falling from the trees, it is a good plan to gather them up from the gutter and put them in a pile. These will decompose in time to a much desired humus. This might be a little trouble, but you will feel fully repaid for the time, when you will want some good loam. In some cities loam of very inferior quality will cost about two dollars per cubic yard and if one has a quantity of this leaf mold, made as suggested, and will mix it with the loam, a very desirable quality can be produced. The leaf mold is the life of the soil and absolutely essential to satisfactory results.

When a top dressing is necessary on soil that is good, Canada hardwood ashes and bone meal will supply all the nourishment necessary, Spread the ashes thickly on the lawn until they show white on the grass and do this preferably before a rain, so the nourishment may be washed into the soil. The hardwood ashes should contain from 7 to 9 per cent of potash. When it is impossible to get a good grade of hardwood ashes, mix muriate of potash with a finely sifted loam, and spread it over the lawn.

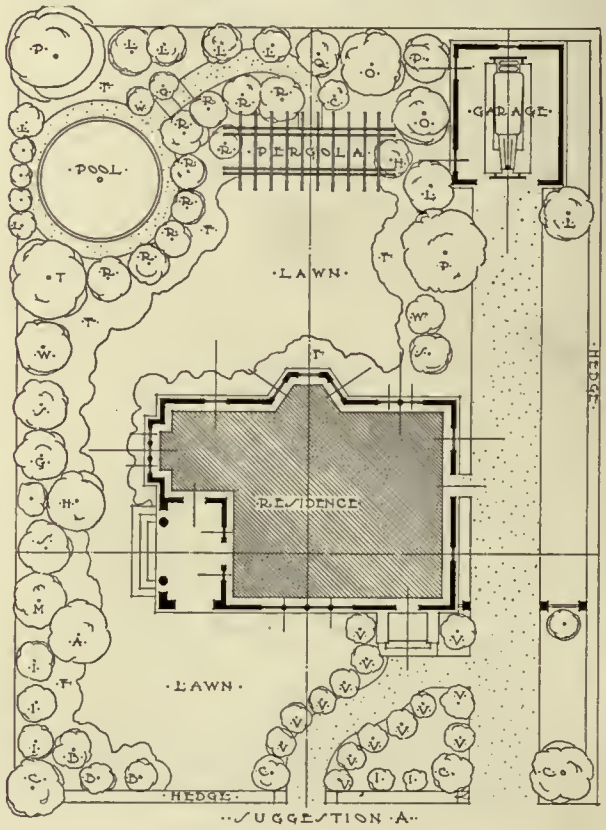
Nitrate of soda is a very vigorous stimulant and produces quick results. It is economical, requiring but small quantity to cover large areas. Spread about 175 pounds to an acre; or if dissolved three

Key to Planting Plot Plan A and B

A=Arbor Vitae Eligatissma (Golden tipped)
B=Barberry
C=Red Cedar
E=Althea (Rose of Sharon)
F=Flowers (Annuals and perennials)
G=Forsythia (Goldenbell)
H=Hydrangea
I=Rosa Rugosa
L=Lilac
M=Magnolia
O=Oak
P=Lombardy Poplar
Q=Maple
R=Rhododendrons
S=Spirea Van Houttei (Bridal Wreath)
T=Philadelphus (Mock Orange)
V=Evergreens in variety
W=Weigelia Eva Rathke

Vines for Pergola

Wisteria
Honeysuckle
Clematis
Boston Ivy



pounds to 100 gallons of water. The dry application should always be made before a rain, otherwise much burning is apt to result in the grass.

Weeds and Worms EVEN when you purchase the very best grass seed and take care of your lawn, you are bound to have more or less weeds. The thing to do when you have them is to get rid of them. The knife is the only real weapon for this purpose. After digging out your weeds, sow in grass seed with the idea of making the grass grow so thick that there will be no place for the weed to creep in. On newly made lawns the weeds are easily removed and they should always be carefully watched so as not to allow them to get too far ahead.

It is surprising how much damage a colony of ants can do on a lawn. They should be looked after the first time they are noticed, for they work rapidly and the longer neglected the more difficult it is to get rid of them. There are many remedies but the best one lies in the use of bisulphide of carbon. This is very effective, but it has come into such common use, that a word of caution should be given as to its handling. It is very explosive when near flame, due to the gas it contains. Pour it into the runways or hills of the ants, and then cover with a mat. The fumes will soon kill all the ants. Another way is to drive sticks into the ground and fill holes with the carbon and then plug up the holes tightly.

Very often earth worms become very disfiguring on a grass plot. Where there are many present it is an indication that the earth is in poor condition, compacted and needing humus. An application of strong lime water will drive many to the surface, where they can be swept up; or a heavy rolling will do much to discourage them.

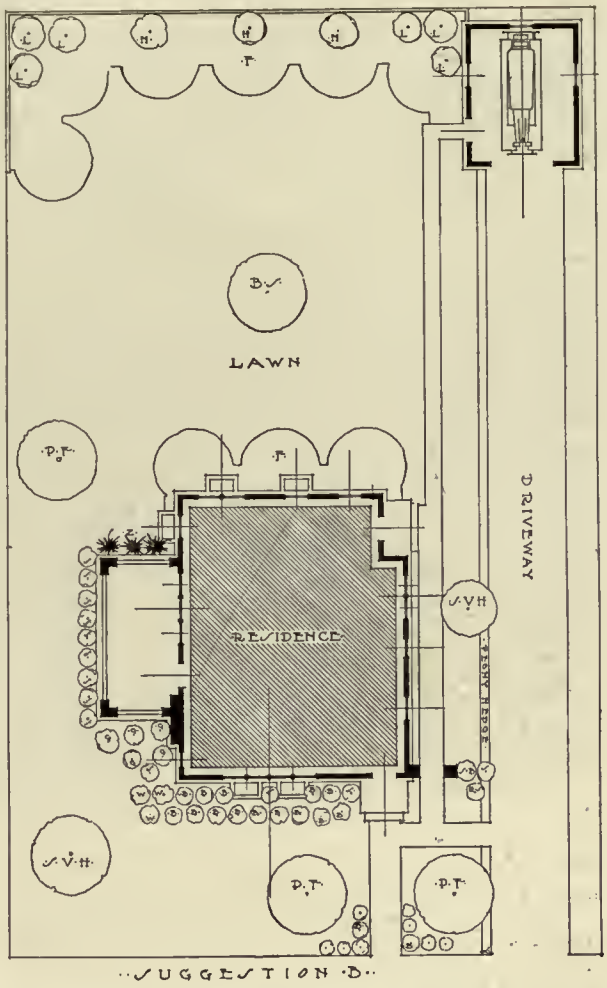
Shrubbery and Vines SHRUBBERY, small trees and vines are essential to the proper decorations of the lawn and garden. We have found that it is a better plan to use more shrubbery and vines and less flowers for beginners.

Of the shrubs, azaleas are the most satisfactory. Their range of brilliant colors and the large size to which they eventually grow, suit them well for the kind of gardening which is here taken up. Rhododendrons, both in their natural and cultivated varieties are also useful and the fact that they are evergreen makes them valuable for decoration in the winter. Altheas, or as they are more commonly known, "Rose of Sharon," bloom in August at a time when few other shrubs are in flower, and as they increase in age, the stems take on a gnarled and twisted appearance which is very attractive. The spirea, hydrangea, and snowberry are also excellent shrub varieties. No attempt can here be made to give anything like a full catalog of the better shrubs and flowers for planting. The few mentioned and those which most closely resemble them are spoken of only to illustrate the effect which one should aim for in gardens close to the house.

A garden should have a boundary high enough to insure privacy. For this purpose, one may have a fence, hedge or masses of shrubbery, trees, etc., which may be planted to form the necessary boundary.

The lawn should be large enough to provide some stretch of uninterrupted green. Arrange paths and make useable for damp weather and on dewey mornings. A place for outdoor lounging with plenty of shade as well as bloom, and so furnished as to encourage living in the open is a very desirable feature and should be interesting in winter as well as summer.

The boundary or walls of garden may be of various heights and widths. They may be of trees, shrubs, hedge-plants or of vine-covered walls and fences. Their success depends upon the feeling of continuity and upon the amount of beauty and interest they can express. Even the boundary of a narrow lot need not be a matter of arbitrary success.



PERENNIALS FOR SECTIONS F

Columbine	Larkspur	Shasta Daisy
Coneflower	Sweet William	Forget-Me-Not
Hollyhocks	Fox Glove	Day Lily
Iris	Golden Glow	Lily-of-the-Valley
Phlox, tall	Coreopsis	Bleeding Heart
Phlox, dwarf	Blanket Flower	Poppy

ANNUALS FOR SECTIONS F

Geraniums	Coxcombs	Begonias
Petunias	Heliotrope	Ice Plant
Zinnias	Candytuft	Pansies
Asters	Portulaca	Salvia
Alyssum	Marigolds	Balsam
Cosmos	Verbena	Ageratum
	Nasturtiums, etc.	



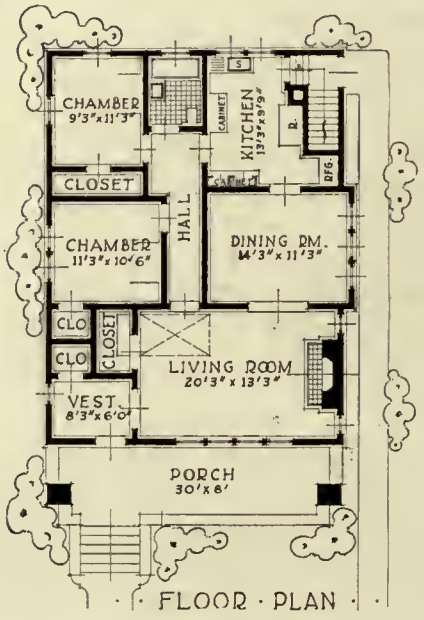
The Tarrytown

THIS bungalow expresses exterior attractiveness and interior convenience that combine for home satisfaction. It's proportion is good and the wood shingled treatment of the outside walls has been very well handled. It's low-pitched roof with wide eave over-hang finished with paneled barge boards and supported by brackets add to the pleasing front perspective.

Living out of doors, as most of us do in the summer, the large porch of "The Tarrytown" will be appreciated by it's owner. The size of the porch is 30′ x 8′ and has a solid built up shingled rail which gives it the privacy necessary on a porch which faces the street.

An attractive bungalow type front door opens into the vestibule, which contains a coat closet for outer wraps. From the vestibule, a cased arch opens into the living room, which in the designing of every American home should be given the most consideration. It is a room where the members of your family and friends gather to play, sew, read and visit. It is the room that is used the most and it should be designed to allow the proper placing of furniture in order that it will look attractive and homey. A cheerful fireplace, if well proportioned, always adds to the appearance of the living room. The group windows in the front wall and the two small casement windows on each side of the fireplace give plenty of light.

French doors, which always add to the appearance of a home when used on the ground floor plan, open from the living room to the dining room, which extends out and forms a bay window. The kitchen contains a convenient place for refrigerator, range, cabinet, pan cupboard and sink. It opens onto a stairs which forms a rear entrance at the grade and also leads to the cellar.



FLOOR · PLAN

Two bed rooms, each with a large closet and a good sized bath, are separated from the balance of the plan by a hall, which opens from the kitchen and living room. Every owner of a two bed room home will frequently find it convenient to be able to provide additional sleeping accommodations. The closet off the living room has been equipped with a Murphy Door Bed, which can be lowered into position for use in a few seconds and adds considerable to the efficiency of this plan.

When not in use it is out of sight and never detracts from the appearance of the room in which it is to be lowered. The size of this design is 30′ wide by 48′ deep including the front porch. A 50′ frontage will be suitable for a proper setting.



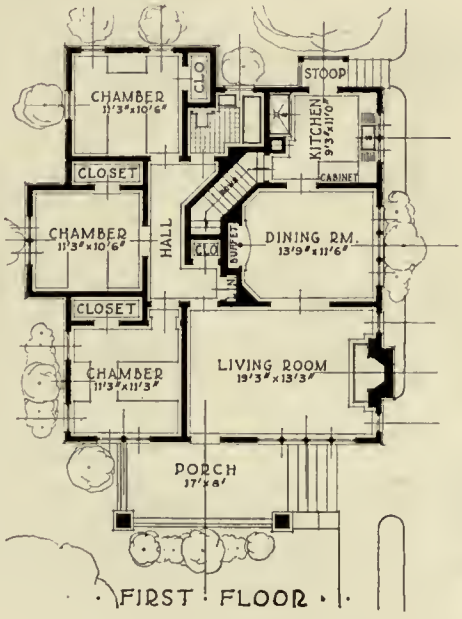
The Cranston

In designing small homes, the main thing to keep in mind is to obtain attractive appearance on the exterior and a convenient arrangement on the interior and keep the construction cost as low as possible. Ten thousand feet of rough and finished lumber will construct a barn and the same amount of material plus thought in the use of standard lengths and knowledge of architecture will construct a beautiful, comfortable home. The main purpose of your Society is to place at your disposal the mine of knowledge gained through years of experience in designing and constructing small homes. Information which will make you a happy, satisfied home builder is yours at cost.

In designing "The Cranston," a different treatment of shingled side wall is used, which gives a very pleasing effect. Instead of laying the shingles in regular single courses of the 4½" or 5" face, the rows are laid alternating the face with a 1½" and 7" exposure.

The porch, in addition to sheltering the front door, provides an outdoor living room, which is greatly enjoyed. The use of red or brown face brick in the construction of the porch pedestals and fireplace chimney will form a pleasing contrast to the gray stain of the side walls and green stain on the roof.

From the porch, the front door enters into a large living room which is made very cheerful by the group of windows in the front, and with the cosy fireplace at the end with casement windows on each side. These windows are placed high enough from the floor so that the space underneath can be used for bookcases if so desired. From the living room one enters the dining room through a pair of French doors. This room is in proportion to the rest of the house and is made more attractive by a built-in buffet on the inside wall. The kitchen is small but complete, containing all the necessary equipment desired for a modern housewife. A hood is placed over the stoop and door which forms the rear entrance.



The hall, which opens out of the living room, gives the necessary privacy to the bed rooms and bath, and contains storage closet and linen closet. Each bed room is large and has a good size closet.

The size of this design is 32′ x 40′.

The plainest board fence, if properly handled, can serve as a background for a garden border. It can be made a thing of rare beauty, with vines and flowers. There can be wistaria and trumpet vines for the posts, rose climbers or honeysuckle, Boston ivy or woodbine; for autumn reds, clematis, both purple and white, the turquoise berry, or if naught else the more than willing morning glory. The very wires and strings on which the vines are trained can be made a matter of pleasing design.

If the walls of the garden have interest of coloring or of bricklaying, if they can be made to give suggestions of well spaced piers or of cool concrete, a dark vine like the English ivy can be trained so as to adorn the wall.

Another attractive boundary for the garden is one of trees and untrimmed shade-loving shrubs, such as the viburnums and privets. Taller varieties of trees should be planted at the rear of the garden rather than at the sides, with, for instance, a row of trees for the very back, and smaller shrubs in front of them.



Many attractive color schemes can be worked out, with flower-blooming trees and shrubs, such as snowball, lilac, hydrangea, snowberry, syringa, barberry, etc., should you desire a hedge border for the walls, the barberry will be found excellent for this purpose.

If the shrubs are to be arranged in groups or colonies, the area they are to occupy should first be thoroughly spaded and prepared as if for flowers, after which the planting may be done in the usual manner. A cultivated area between closely planted shrubs stimulates their growth and is easier to keep in order than grass, which succeeds poorly beneath their shade, and is, in such places, difficult to mow.

The following is a list and description of the trees, shrubs and vines most commonly used and are sure to give excellent results when properly placed.

Coronarius Fragrant Syringa.—A hardy shrub of rounded form and luxuriant foliage, with masses of pure white, intensely fragrant flowers in June.

Barberry Hedge.—Exceedingly neat and dense in growth, barely 3 feet high under the best conditions, yet quite graceful because of its drooping branches. The yellow flowers are followed by scarlet fruits borne in dense profusion on the long stems and clinging through most of the winter; the leaves color to scarlet and gold in Autumn.

California Privet Hedge.—The best known and most universally used of all. Handsome, large foliage.

Deutzia Crenata.—The beautiful white, single-flowered species growing 6 to 8 feet tall, and a mass of bloom in early June.

S. Thunbergii D.—Of dwarf habit and rounded graceful form; branches slender and somewhat drooping; foliage narrow and yellowish green; flowers small, white, appearing early in Spring, being one of the first spiraeas to flower.

Spiraea.—Anthony Waterer. This is a fine, new dwarf spiraea, with dark, crimson flowers, darker than bumalda in the late part of Summer.

Ever-blooming Butterfly Bush.—Named thus because it seems to attract butterflies in large numbers. Beautiful clusters of purple flowers. About 4 feet high.

S. Van Houttei.—Growing to 8 feet tall, this is one of the finest ornamental shrubs in common use, and much used in good landscape work. Its branches droop with singular grace under their white burden of flowers in late Spring.

Diervilla Rosea.—A free-flowering shrub, usually about six feet tall, with numerous spreading branches. Leaves dark green, smooth except on the midrib and veins.

Deutzia Gracilis.—Will grow to three feet and will do well in shade. Will bloom in May. White.

Deutzia Gracilis, Rosea.—Pinkish-white; will do well in the shade and will grow to three feet. Will bloom in May.

Deutzia Lemoinei.—White; this is the most showy of the three; will bloom in May; about three feet tall.

Clematis-Jackmanii.—This variety bears a profusion of large-sized, intense violet-purple flowers, six inches across, richly veined; a rapid grower; early culture. Is equally fine as a climbing or trailing plant and well adapted for covering all unsightly objects; in flower from June to middle of October.

Lomicera (Honeysuckle).—This includes some of the most desirable climbing plants that can be used for covering arbors and porches.

Wisteria.—One of the most magnificent, hardy climbers, flowers early in Spring and Autumn. Attains height of 15 or 20 feet in a season.

Climbing American Beauty.—This wonderful new rose is called the Climbing American Beauty on account of its hardiness and unusually strong growing qualities. Although it can be trained successfully to trellises and porches, it is unequaled as a pillar rose and grows magnificently in bush forms.

Dorothy Perkins.—Hardy, clear, shell-pink; full and double; petals crinkled; flowers borne in clusters; foliage almost evergreen.

Crimson Rambler.—Hardy, famous everywhere; most effective when grown on pillars or trellises. Foliage large and glossy; vigorous grower; panicles of bloom large and perfect for weeks.

Purple Fringe.—A unique and conspicuous spreading shrub or small tree 10 to 12 feet high, with large leaves. These are overhung in midsummer by cloud-like masses of very light, mist-like flowers, having the appearance of smoke at a little distance. Foliage changes to brilliant shades of yellow and red in Autumn.

Hydrangea.—One of the best known and most popular of all flowering shrubs. Its massive plumes of white flowers bend the branches with their weight, changing finally to pink and bronzy green.

Cut-leaf Weeping Birch.—Tall and slender, growing to 50 feet, vigorous, with large double bright scarlet flowers. Fine for planting in a mass.

Norway Spruce.—One of the strongest, sturdiest and most vigorous of all the spruces, being much used for shelters and windbreakers. It forms a most magnificent ornament of the lawn when planted out where its majestic proportions will have room to develop. It grows 40 to 60 feet high, with very dark green foliage and branches close to the ground, forming an immense pyramid.

Norway Maple.—The finest of all shade trees for street planting and equally valuable for planting on the lawn, where it grows to magnificent proportions. Foliage is handsomely cut and dark green, creating a dense shade.

Oriental Plane.—It grows rapidly to grand size, is bold, picturesque, hardy, healthy, free from insects, vigorous in all soils, especially along the water's edge.

Schwedler's Maple.—A variety of the Norway with foliage which comes out in Spring, bright red, changing in midsummer to purplish green and later to golden yellow. Makes a magnificent street tree, but its beauty is better emphasized on the lawn.

Double Flowering Hawthorne.—The thorns justly deserve to be classed among the most beautiful flowering trees. They are generally dense, low growers, occupying comparatively little space and well adapted to beautify small grounds. They flower in May and June. The varieties of American thorns are particularly interesting in Autumn on account of their showy fruit.

Althea Tree.—These make splendid individual specimens for the lawn and with very little pruning may be grown in almost any desired form, such as pyramid, globe, etc.

White or Silver-leaved Linden.—Conspicuous among other trees because of its silver-lined leaves. These give it a fresh brilliancy when ruffled by the wind. Handsome, vigorous, pyramidal in shape; 60 to 80 feet high. A handsome lawn tree.

Scotch Pine.—Dense, broadly pyramidal, 50 to 80 feet high; luxuriant in growth with erect shoots and silvery needles.

Irish Juniper.—An erect, dense column of dark green, 20 to 25 feet high; found quite effective in general landscape and formal planting.

Snow Ball.—Shrub trained to tree form, making unique lawn decorations.

Kloster's Blue Spruce.—The very best of the blue spruces. Foliage is silvery blue, densely crowded on the many branches.

Trimming Shrubbery Those shrubs that bloom before the middle of June bear their flowers on twigs of the previous season's growth. When these twigs are trimmed in winter, the very branches that would have flowers the following spring are destroyed and the bloom sacrificed. Trim such shrubs, if they need trimming, immediately after they have finished blooming, by removing dead twigs, cutting out short, weak ones and clipping back long, ungainly branches to preserve the natural, graceful form of the plant.

Shrubs like hydrangeas and altheas, which flower after the middle of June, carry their bloom on twigs of the same season growth. This growth and the number of branches that will bear flowers is increased by pruning in winter, the season of the year in which all shrubs that flower after the middle of June should be trimmed.

Newly planted shrubbery should be cut back severly at time of planting. This treatment reduces the number of buds to be supplied with nourishment, and has a tendency to make the growth much more vigorous than if it were not so pruned. Generally from ⅓ to ½ of the top should be removed. While this may seem to spoil the shrub, it really is the making of it. The plant will be more bushy and can be trained, as it grows, into the shape of plant desired.

When shrubbery is planted in the spring, this trimming is perhaps most easily done before the plant is set in the ground. When planted in the autumn it is usually best to defer the trimming until early in the spring.

Dig a trench wide enough and deep enough to accommodate the roots without cramping (usually about 15 to 18 inches).

It is preferred to place well rotted manure in the bottom of the trench, dig it about ½ foot deeper than otherwise, and put in two or three inches of manure, shoveling over it a layer of top soil until the trench is refilled to the depth sufficient to admit proper planting. *Do not let roots come in direct contact with manure.*

It is a good practice to mulch the hedge often while being planted, so that the manure will conserve the moisture, and the strength-giving elements from it will percolate around and about the roots.



Fig. "A"—Because the tops of hedges trimmed like these are broader than the base, sunlight does not reach the bottom branches.



Fig. "B"—Sunlight reaches the bottom branches of hedges trimmed like these and they remain dense and healthy.

Place the plants so that their branches will touch one another, or, if a thicker hedge and immediate effects are desired set them even closer, so that their branches can interlace. Press soil firmly about the roots and otherwise plant in the usual manner.

Probably more hedges become thin and ugly at the base for want of sunlight than from any other cause. This condition is often the cause of trimming improperly. In Fig. "A" the tops of hedges trimmed

like these are broader than the base. Sunlight does not reach the bottom branches.

On hedges trimmed, as shown by Fig. "B," the sunlight reaches the bottom branches and the hedges remain level and healthy.

A Rose Garden When one considers the fact that there are over four thousand species of roses, it will readily be understood that this chapter can give but a rough working knowledge of the groups and species. If there is any secret in connection with the growing of beautiful roses in abundance, it lies in the strict observance of a few fundamental principles thru which the rose plants, or bushes, are given a location and soil which they will find congenial and nourishing. Be generous in the amount of thought and care you give in producing health, food and strength for your rose plants, and as a result you will have to give very little thought and care to curing disease and killing off the rose bugs and slugs.



Location In selecting a location for your Rose Garden, the ideal location is to be found neither on a hilltop where the winter winds will play havoc with your winter protection, nor in a low hollow where frosts are always more frequent. A rose garden must be kept away from any tree. It is generally known that the root system of a tree will spread out as far from the base as the height of the tree and takes up all the moisture in the ground. Therefore, we will have to use the wall of a house or a garden wall for protection.

Sun is very essential, though it will be found that if the beds are in shade for the first part of the morning, one will have the opportunity of enjoying the roses at their best, before the dew has been taken from their petals by the sun. Make your rose garden a separate garden; do not crowd in or near any other plant or vine.

Preparation and Planting Now as to preparation of the rose bed itself: First of all, dig the soil out to a depth of two feet at least, keeping the top soil and sods, and the sub soil in separate piles as they are taken out. Loosen up the floor of the trench with a pick, and on this, if the ground needs draining, which it will if it is a compact, sodden surface, put a layer of stones, cinders and other material that will not decompose. On top of this, place the best of the sub soil mixed with a generous dressing of well rotted manure, finally all the sod, well broken up, and the top soil, also enriched with manure. Then fill in the bed with enough good top soil to bring it two or three inches above the adjoining surface. Make sure that the surface bed, after it has settled, will be about one inch below that of the adjoining sod in order to retain the moisture from rain. This preparation of the bed should be done at least several weeks in advance of planting time.

In composing the soil for the rose bed, it is well to remember that the Hybrid Perpetuals require a heavy soil containing some clay. For Teas and Hybrid Teas a lighter, warmer soil is better.

Top soil from an old pasture, if it be a moderately heavy loam, taken with the grass roots and chopped very fine, will do excellently for the Hybrid Perpetuals. For the Teas and Hybrid Teas, mix with soil of this kind about one-quarter of its bulk of sand and leaf mold to lighten it. Remember that all the manure that is used should be incorporated with the lower two-thirds of the bed; the upper third should not contain any recently added manure as it is apt to harm the roots of new plants.

If spring planting is chosen the plants must be put in the ground early, at the first opportunity, so that they will have time to become firmly established before hot weather.

Pot grown plants from greenhouses cannot, of course, be set out until all danger from frost is past.

Before setting the plants, examine each carefully and cut off all the broken roots with a sharp knife, as well as all eyes that may appear on the root stock, in order to forestall suckers. They should be set immediately upon their receipt from the nurseryman, so that the roots will not dry out. If they seem dry it might be well to puddle the roots in thin mud just before setting. Make the holes large enough to accommodate all the roots without crowding, remembering to put the budding point not less nor more than two inches below the surface, and with the roots spread out almost horizontal, but inclining downward toward their ends and without crossing one another. This will not be an easy matter, for in shipment the roots will have previously been so compressed that they extend almost directly downward from the collar. After the plant has been firmly set and the earth carefully packed in around the roots, rake the soil to loosen it up over the whole surface.

With the pot-grown plant, the moist ball of earth that comes about the roots is carefully retained intact and placed in the hole prepared for the plant. Set the plant firmly in place by pressure with the soles of your shoes, give a generous watering, and finally break up the surface of the soil with a rake.

It is absolutely essential to keep the surface of the ground loosened with a hoe and a sharp steel rake, thruout the summer. After very hard rain loosen the soil as soon as it is dry enough to work, to conserve the moisture.

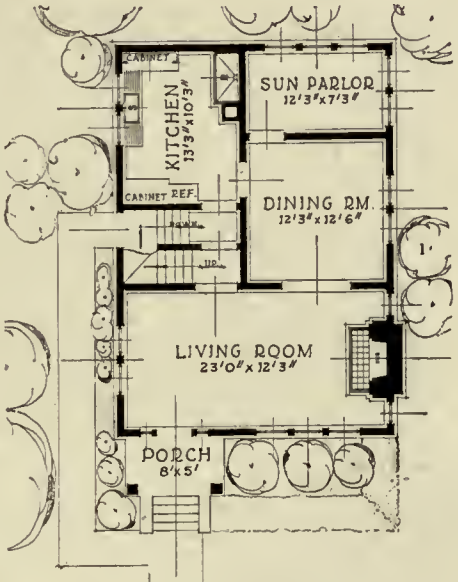
As stated before, there are thousands of species of



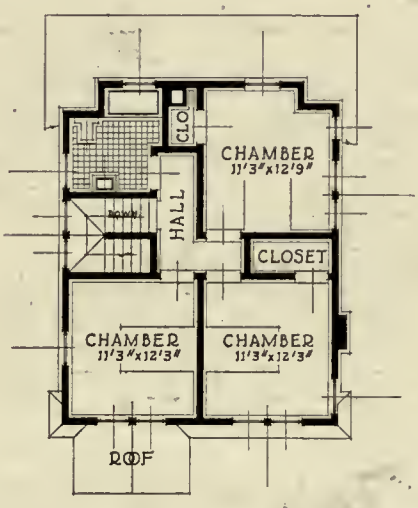
The Hudson

THE HOME illustrated above is a very attractive two story type suitable for a narrow city lot. With the exterior wall covering of wide siding painted white or ivory and window shutters moss green you will have a home that will be worthy of any location. The gabled porch roof on a line with the shingled flare carried across the front takes away any suggestion of plainness.

On the interior, the living room has windows on three sides and plenty of wall space for the proper placing of furniture. A large dining room, sun parlor and conveniently arranged kitchen complete the first floor plan. The arrangement of main and cellar stairs is especially good and requires a very small amount of space. The second floor plan contains three bed rooms and large bath. This design is 24′ wide and 34′ deep.



· · FIRST · FLOOR · ·



· · SECOND · FLOOR · ·

roses, but the following list describes favorite, hardy varieties.

Frau Karl Druschki.—Hardy, known also as White American Beauty and Snow Queen. Flowers large and full, of splendid form; petals long, broad and saucer-shaped. The flower shows no tinge of yellow or other shades. Buds egg-shaped, long and pointed.

Killarney.—Hardy, sparkling shell-pink, deep and brilliant; flowers large, delightfully fragrant, with fine petals. Bush strong and upright with beautiful foliage; free-blooming. One of the very best of the many splendid Irish roses.

Caroline Testout Rose.—Hardy, color satiny rose, deepening to clear red; buds and flowers large and finely formed.



Marshall P. Wilder.—Hardy; cherry-red, bright hues; flowers of good size, perfectly double; very fragrant. There are few more beautiful roses and seldom do we find a variety of greater all-around usefulness.

Tausendschon (Thousand Beauties). — Hardy. Colors run from delicate rose through intermediate shades of carmine; with white, yellow and other shades and tints showing. The variations in color give it its name. Blooms profusely through June and July, in large clusters; flowers of splendid size and quite double.

Etoille De France.—Velvety crimson, on stiff, erect stems; cupped form, continuous and free flowering; very fragrant.

Ulrich Brunner.—Hardy, cherry-crimson; very fragrant and striking; of beautiful form; flowers superb, bush vigorous; continuous bloomer.

Fertilizing In contrast to the beauty of the rose, is the food that we must give it in abundance if we would have the most healthy plants.

The theory of this manurial feeding will make clear the fact that a proper application of liquid manure has practically all the advantages of the solid method without its drawbacks. For solid manure, if applied to the beds in quantities sufficient to be of real value, has a tendency to keep the needed air out of the top soil and to bring in its train an abundance of weeds that will be hard to exterminate. So that with the exception of light sandy soils, where the humus is needed, we shall do well to feed the rose garden liquid nourishment.

The time when this stimulant will be most effective is in the months of May and June, when most of the plants are putting all their efforts into the forming buds. Withhold the liquid in dry spells, for it is most appreciated immediately after a good soaking rain.

Avoid getting the manure on the foliage and make sure that it errs on the side of weakness rather than strength. Suspending a burlap sack containing a bushel of cow manure in a barrel of water for two days, will give a solution that needs dilution with its own bulk of water. A half gallon to a plant each week will be sufficient normal feeding.

Immediately after dosing the beds, go over them with a rake or prong hoe and loosen up the surface to prevent evaporation.

Pests By far the most effective campaign against the insects and other pests that infest rose plants is to be found, not in sprayings and dustings, but rather in maintaining to the best of our ability a condition of health in the plant itself. Prevention here, as always, is better than cure. Nor can it be too strongly emphasized that the daily use of a powerful, but finely divided spray from the hose will make life on the rose plant miserable for practically all the parasites. The following are the chief enemies that we may find in the rose garden.

Aphis or Green Fly. To exterminate it, use tobacco smoke. If spray is more convenient, four ounces of cheap tobacco stem boiled ten minutes in one gallon of soft water is effective. Strain the solution and add four ounces of soft soap while it is still hot, stirring well to dissolve the soap.

Mildew. Dusting flowers of sulphur upon the foliage, taking care to reach the under side of the leaves as well as the upper and upon the ground about the plant, is a well established remedy.

Rose Caterpillar or Leaf Roller. Powdered hellebore will hinder their progress, but by far the most effective weapons are the fingers and thumbs.

Rose Chafer or Rose Bug. Paris green dusted over the plants will kill the pest. Knock the creature off the flowers into a tin of kerosene and then burn it.

Rose Slug. Powdered white hellebore, dusted on the foliage, or the solution of whale-oil soap mentioned for the Rose Thrip, will keep it in check.

White Grub. About the only thing that can be done with the White Grub is to lift the plant and remove it.

Black Louse or White Scale. This appears when the bush is grown in a shady, damp place. It is snow white and the individual scales are about one-tenth of an inch in diameter. Cut off and burn badly infested shoots. Spray with one pound of soap in one gallon of water in early winter and again in early spring. Weaker summer applications may be used also; one pound to four or six gallons of water, once in three weeks, thruout the season, will help.

Helpful Animals in Rose Gardens. The toad, lady bug, ground bird, and swallow will help wage war on the pests of the rose bush. It may be well to scatter a few crumbs in the rose garden to attract birds there, not too many, but just enough to create a real appetite for the insect pests.

Flowers

THERE are three great classes of plants, of flowering plants, let us say, from which a garden may be stocked; these are perennials, biennials, and annuals. Perennials, once established, either from seed or root, persist and bloom year after year; biennials start from seed one year, do not bloom until the next, and then die at the end of the second year; annuals come from seed, mature, blossom, produce seed and die, all in one year, or more accurately speaking, in one summer.

Flowers, more so than any other form of nature life, must have the proper attention and food. They must be looked after from early spring till the seeds are ready to pick in the fall, or they are ready to be covered for the winter.

Careful study and preparation should be made for the different kinds of plants you wish to use.

Soil in which seeds are to be sown cannot be too fine and delicate in texture, and all things considered, more seeds fail because of unsuitable soil than from any other cause. It makes no difference how sturdy a plant will become when it grows up, it starts as a tender, wee infant; and its puny strength must not only send the imprisoning earth above it, but it must put forth the arms with which this is going to be done. The less vitality that need be used, therefore, in breaking thru, the more there is to use in growing, hence the greater vigor, the more luxuriant growth, and greater strength.

Very rarely is even a good garden soil quite the ideal soil for starting seeds in boxes, for it is not mellow enough. Rotted sod is the skilled gardener's hobby—sod taken from rich old roadsides, where grass grows thick and soft—but this is not to be had for a this-year garden. So, the next best thing, which is the scraping from the under part of a good rank sod, must be taken. Scrape with a rather sharp metal edge, thus breaking all the root particles up into a fine mass. Screen one part of this soil to one part of dry leaf mold from the woods, or two parts of the soil to one part of thoroughly rotted, fine manure, thru a quarter-inch mesh sieve. A wire basket, such as the household departments sell for lowering eggs or potatoes into a kettle to boil, is just the thing. Then add sand enough to the mixture to make it crumble apart readily, even when moistened. Usually one-third sand is about right.

Flats made from cracker boxes are just right in size and weight and two boxes will make several. Cut one into three-inch sections lengthwise; the top section, with the cover nailed on it, is already one flat, the bottom section another. Onto one side of the other sections nail bottoms made from the other box; bore half a dozen holes in the bottom of each of them for drainage and they are ready.

Cover the bottom an inch deep with, first, a layer of cinders or gravel—anything that will be loose and stay so; then put screenings over this. On top of this drainage layer spread the prepared soil and jounce the flat onto the table to settle it all well. Sow the seeds according to the directions which each packet bears, covering them usually to the depth of their own diameter. Some give them twice this cover, but a little is better than too much. Sift the earth onto them and pat it down gently with a float or flat board, or the hand, held very flat. The float is better, because it leaves no little furrows into which even a little water can wash the seeds.

Soil that has been well watered the day before planting is in just the right state of moisture to receive seed and to be sprinkled over them. Water the flats after seeding, either with a fine sprayer that will spread the moisture in a mist, or else thru two or three thicknesses of coarse cloth, like burlap, with a watering-pot. This is to prevent the force of the water from washing the seeds out and messing things up generally, as it most certainly will if poured from the pot directly upon the soil.

Put the flats in a warm place; a sunny window will do if direct sun is kept from the earth surface by means of a semi-transparent curtain, and keep them evenly moist—*not* wet—until the seedlings are above the surface. After they appear keep very careful watch upon their moisture supply and water them whenever the soil is dry, before they have had a chance to wilt. Give as much water at such times as the soil will take up—then do not water again until it once more looks dry. And be very careful to keep the little plants themselves dry—their stems and leaves.

Transplant them to flats an inch deeper than the original seed flats, or flats having an inch more earth in them, or to plots (the little paper pots are a great convenience, especially when setting out finally), when the second true leaf appears, unless the directions on the packet stipulate differently. Water the soil (this must be similarly prepared) into which they are to go, the day before transplanting, and, likewise, water that in which they already are planted. Then they will loosen readily from it. Take them up by shoving a knife or trowel down at the edge of the flat and loosening a chunk of earth, plants and all. Then crumble this gently apart in the fingers, detaching the little roots carefully. They will come out quite easily this way, with seldom a fracture of even the most delicate.



Set each little plant into its new quarters with the aid of a dibble, a round tapering-pointed affair made from eight inches of old broom-handle, sharpened to a slim point, the slimmer it is the better, for tiny seedlings. Or something much smaller may be used—any stick whittled down to this form; the large form is necessary for heavy work, but a match

will serve for this kind. Thrust it down into the earth to make the hole to receive the plant and make this as deep as the length of the roots, plus half the stem.

Lower the little plant into it until only half the length of its stem remains above ground; then press the dibble into the soil again, an inch from the first hole, and crowd the earth over and against the roots by tilting the top of it. Firm it finally by pressing lightly down on each side of the stem with the balls of the thumbs, but do not pack it as tightly as you can. The idea is to get all the little root hairs in contact with earth and to do this without dragging against them from any direction; and this final pressure down is only to close up all gaps in the earth that may be anywhere about the plant, not to push it down into the earth.

Water the soil thoroughly, not the tops of the plants, after transplanting, and then give the seedlings, all the fresh air possible, without chilling them, all the time. Remember it is the breath of life to them as well as to us. Water them whenever the soil looks light colored and dry on top, not oftener, and shade from the noonday sun for a day or two after transplanting.

Cut flowers for the house should have freshly cut stems in order that the water can gain access to the cell walls of the stem thru the action of osmosis.

The life of cut flowers can also be increased by changing the water daily and by recutting the stems which will allow the water to work up into the flower more easily.



Keep your flower garden free from weeds, not only for the purpose of beautifying it, but keep them from crowding the plants and taking the moisture from the ground. Plants must be kept free from dead leaves and flowers, and it is also a good plan to keep the blossoms well picked off on plants such as pansies, sweet peas, nasturtiums, etc.

As we stated before, the beginning of the garden is almost the most important part, but care and work is also necessary on the garden in the fall. If your garden has been a success, gather the seeds and take up the bulbs for the next season and remove the dead plants, etc. Fertilize the ground in the proper manner.

The following are popular Annuals:

Geranium, Petunia, Zinnia, Aster, Allyssium, Cosmos, Heliotrope, Candytuft, Portulaca, Marigolds, Verbena, Begonia, Coxcomb, Ice Plant, Pansy, Salvia, Balsam, Ageratum, Nasturtium, Pinks, Baby's Breath, Lady Slipper, Stock.

The following are popular Perennials:

Columbine, Anemone, Cornflower, Hollyhock, Iris, Phlox, Larkspur, Sweet William, Foxglove, Goldenglow, Coreopsis, Blanket Flower, Shasta Daisy, Forget-Me-Not, Day Lily, Funkia, Lily-of-the-Valley, Bleeding Heart, Poppy.

Bulbs Bulbs will indeed grow almost anywhere; but wherever they are and whatever conditions of moisture they may like, always remember that a bulb itself must have free drainage.

However wet the location into which they are to go, and however heavy and muck-like the soil, this is readily accomplished by setting the bulb onto a cushion of sand or of fine coal ashes. This cushion may be shallow or deep according to conditions, the denser soil and greater moisture requiring the deeper layer of loose drainage medium. True bulbs, especially those of the open, scaly class, should be bedded upon a two or three inch layer; indeed it is well to bring an inch wall of sand up around such as these, leaving only the top to come in contact with the soil. The roots which the bulb puts forth will go thru the sand, of course, immediately, in their search and reach for moisture, while the bulb remains safe and snug and dry.

Fertilizer is appreciated by all bulbous plants, but manure ought never to touch a bulb of any kind. Usually the gardener is advised to apply cow manure liberally and space the ground very deep, then grow something else for a season before planting the bulbs. This insures the decay of the manure but it delays the garden; consequently it is not a method with which one has much sympathy.

Bone meal is really the safe and, therefore, the best thing to use, when the bulbs are being planted. It may be mixed into the earth below and around each one, and worked in over the surface after they are buried. Once they are underground and established, however, well rotted cow manure may be applied to the ground above them, and worked in each spring; or even left to lie loose on the ground. It will leach thru the soil under the rain, and enrich it down to where the feeding roots are.

Bulb plants are different from all others in that they make and store away each season's bloom during the preceding season. This is the process that is going on when we speak of the bulb's "ripening;" and unless it is absolutely uninterrupted, no flowers can be produced during the succeeding year. Every bulb, as it comes from the ground in a dormant state, contains next season's flowers, every one of them—tiny, rudimentary embryos to be sure, yet nevertheless, the actual blossoms. Bulbs that do not, are immature and cannot bloom until they have given time and opportunity, in the ground, to reach maturity.

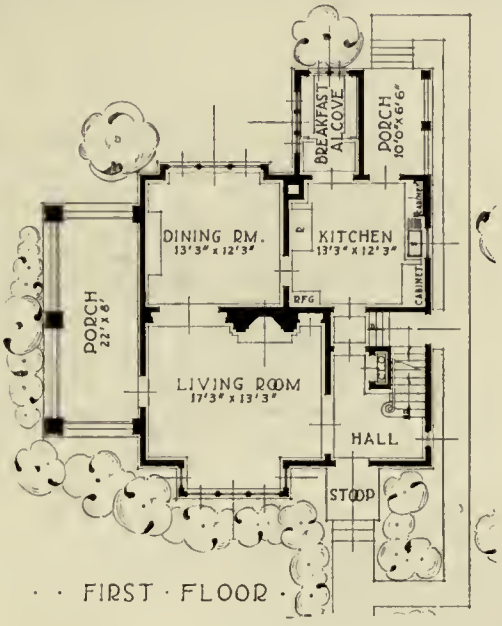
Hardy Bulbs Crocus, Dog's Tooth, Adder's Tongue, Narcissus, Daffodil, Hyacinth, German Iris, Yucca Filamentosa, Tulip, Japanese Iris, Gladiolii, Star of Bethlehem, Peony, Yellow Day Lily, Japanese Lily.



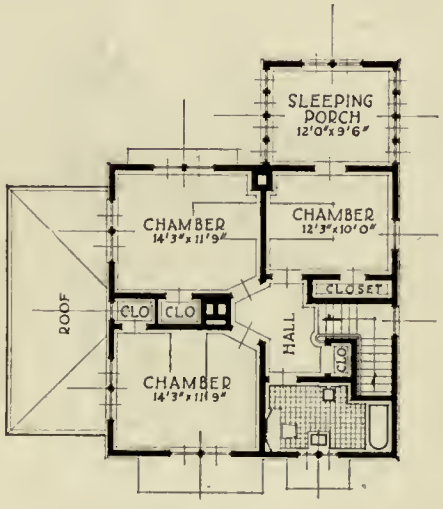
The Superior

A HOME of unusual distinction with exterior wall covering of white Portland cement. The main part of the house is 28′ square with 13′ x 10′ addition forming back porch, breakfast-alcove and sleeping-porch. The porch at the side is 22′ x 8′ and can be enclosed with casement sash forming a sun-parlor if so desired.

The entrance is into a hall containing coat closet and also passage thru to kitchen under main stairs. French doors are used in the openings between living-room, dining-room and hall. The living-room is very attractive with cosy fireplace and deep bay window. The dining-room has sufficient wall space so a door could be placed in the side wall leading onto the porch, permitting outside dining in pleasant weather. Kitchen, breakfast-alcove and rear porch complete the first floor. The second floor contains three bed-rooms, closets, bath and sleeping-porch.



· · FIRST · FLOOR · ·



· · SECOND · FLOOR · ·

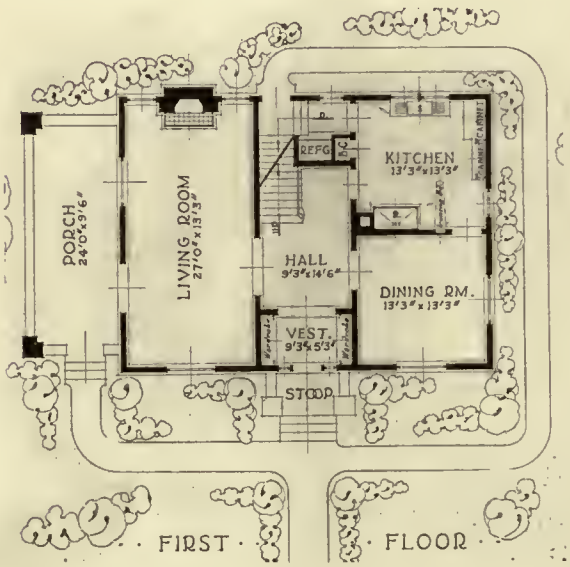


The Durant

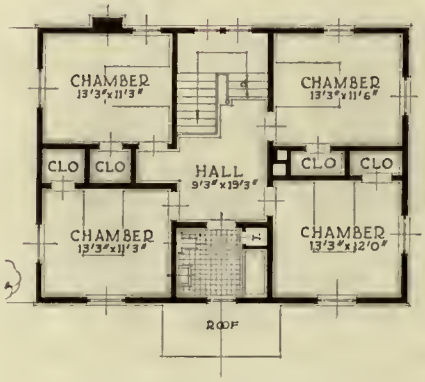
The simple lines and good proportions of this substantial home are especially emphasized by the use of white Portland cement stucco for exterior wall covering which suggests strength and stability. The plan is 38′ wide and 28′ deep with a 10′ porch and would require a lot having a frontage of 75 or 100′ to set it off to the best advantage.

The front door with Colonial side lights enters into a good sized vestibule with wardrobes on each side. On one side of the central hall is a well proportioned living-room with a pair of French doors opening on the porch. On the other side of the hall are the kitchen and dining-room. Features, such as ironing board, broom closet, hopper door for incinerator, kitchen cabinet, etc., which have a strong appeal for the housewife, have been incorporated in this plan.

The four bed-rooms on the second floor have been located on the corners making it possible for cross ventilation, a very desirable feature; each bed-room also has a good sized closet. The bath-room contains a cabinet for towels and linen and completes the second floor plan of this delightful home.



· · FIRST · FLOOR · ·



· · SECOND · FLOOR · ·

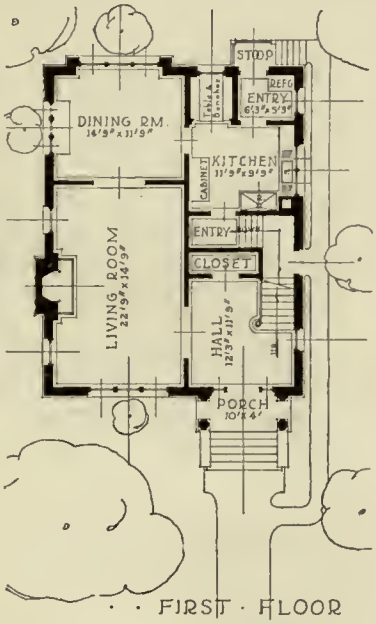


The Windemere

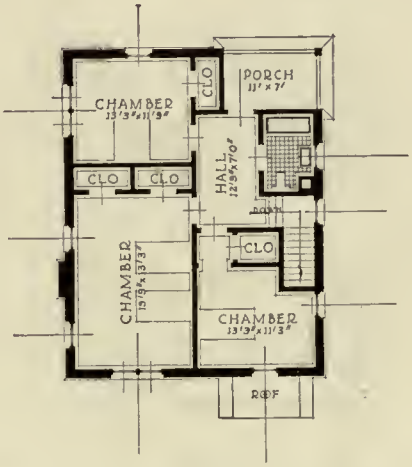
THIS simple, dignified, square type with walls of face brick, is practical for a narrow city lot. The design of porch roof, attractive front door with side lights and detail incorporated in the brick work give this home a very attractive exterior.

In checking over the floor plan you will be immediately impressed with the large entrance hall containing beautiful stairway and convenient cloak closet. Living room and dining room occupy the space on the left side of the first floor, with openings equipped with French doors. The rear entry or "cold" room with refrigerator storage and the dining alcove opening off the kitchen add to the efficiency of this part of the house. A balcony with a door opening from the upstairs hall makes a very convenient place for airing bedding, etc. and adds to the efficiency of the second floor plan which contains three large bed-rooms and bath.

Good closet arrangement is found in each bedroom. Size of this design is 31′ wide and 35′ deep.



· · FIRST · FLOOR



· · SECOND · FLOOR · ·



The Winchester

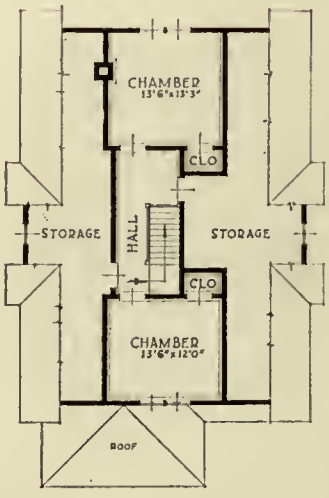
This home has good character and the style and lines carry out the bungalow effect to advantage. The large porch columns with embellished caps, while costing little, add much to its charm. The size of this home is 30′ wide and 40′ in length.

One enters the living-room through a vestibule with a roomy closet for outdoor wraps. The living-room is large and cheerful, with a French door opening onto the front porch. Around the center hall are two bed-rooms and bath; also stairs leading to the second floor. The dining-room and kitchen complete the floor plan of this cosy home.

Complete living requirements are found on the first floor, so the second floor can be left unfinished if so desired.



· · FIRST · FLOOR · ·



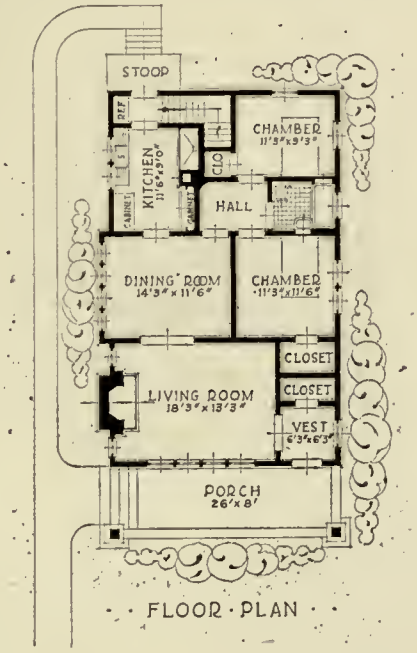
· · SECOND · FLOOR · ·



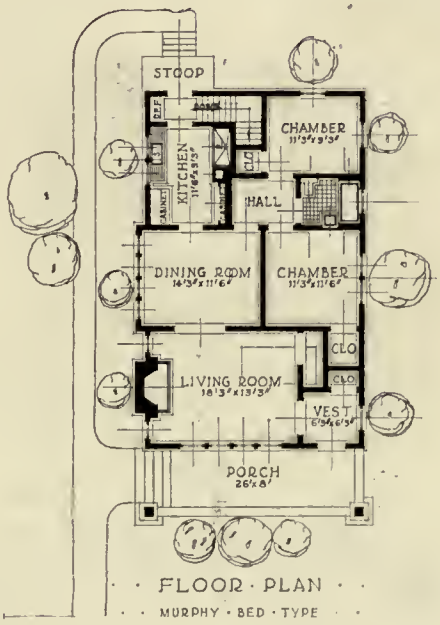
The Winona

THIS design is sure to find favor among those who are interested in owning a bungalow. The large cosy porch with its roof supported by two square tapered columns is the most prominent feature of the exterior.

A choice of two floor plans is available. By rearrangement of the closet space off the vestibule, room is provided for the installation of a Murphy Door Bed, thus making a three bed-room house by the use of this modern feature. The living-room is well proportioned with a cheerful fireplace at one end and connects with the dining-room by French doors. Off the center hall are two comfortable bed-rooms and bath. The kitchen is planned for convenience and has a cellar stairs in the rear.



FLOOR · PLAN



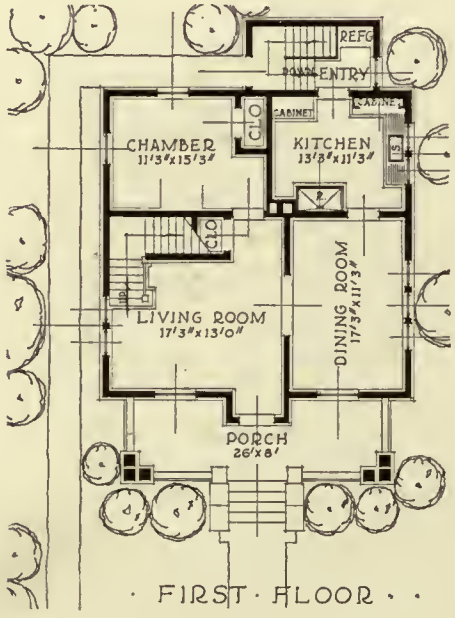
FLOOR · PLAN
MURPHY · BED · TYPE



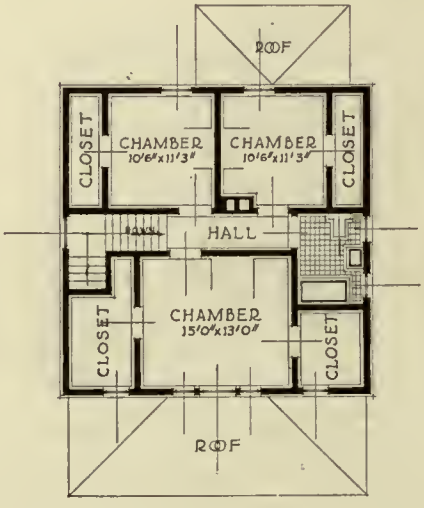
The Carlisle

THIS one and a half story home presents a substantial appearance. The front view is particularly attractive with its cosy porch and high pitched roof with lattice work and brackets in the gable.

An attractive semi-open stairway leads from the living room to the second floor. At the rear of the living room is a down stairs bed room, a very desirable feature. The dining room is rectangular in shape and is well lighted by a triple window in the side wall and a single window in front. At the rear of the kitchen is a one story addition designed for refrigerator platform, also for stairs to grade platform and cellar, which is planned to be excavated for full basement. On the second floor are three bed rooms with closets and bath. This home is 30′ wide and 30′ deep exclusive of the 26′ x 8′ porch at the front and the projection of the addition at the rear.



· FIRST · FLOOR · ·



· · SECOND · FLOOR · ·

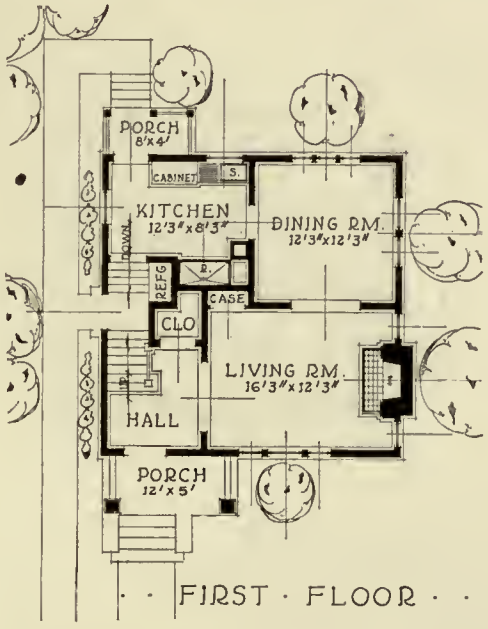


The Clinton

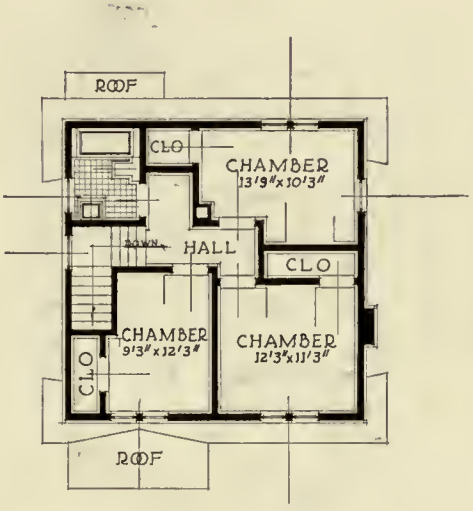
The gambrel roof type of home has always been in favor, but in recent years, has become extremely popular. To the builder of a small home, who is partial to this type of architecture, this design cannot help but make a good impression with its first story walls of wide Colonial siding, dormer and gable ends of wood shingles.

The entrance hall has a good size coat closet and opens into the living room with attractive fireplace at one end. A built-in book case is designed in the inside wall of this room. The kitchen is small but conveniently arranged and opens to the grade cellar stairs and rear porch.

The second floor plan shows three bed rooms and bath. This plan is 26′ 0″ by 26′ 0″ and will place very nicely on a narrow city lot. A full basement is planned for heating plant, laundry and fuel.



· · FIRST · FLOOR · ·



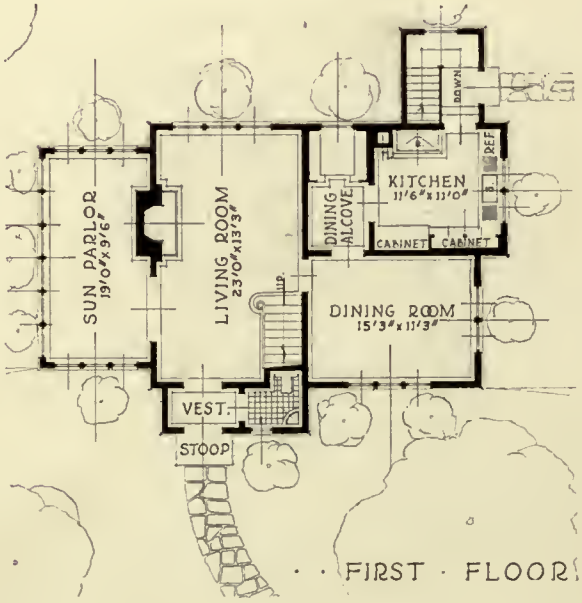
· · SECOND · FLOOR · ·



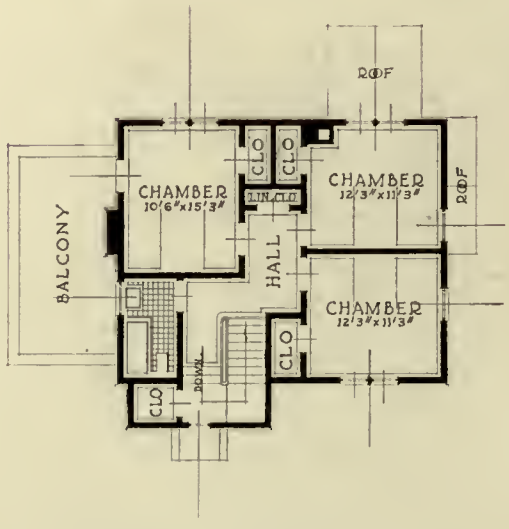
The LaSalle

A CHARMING Americanized English type with exterior walls of Portland white cement stucco has an appeal which will reach every home builder interested in this style of home.

The treatment given the roof by the front gables and simple hooded entrance are outstanding features. Who would not have the desire to enter the doorway for a view of the interior? Directly off the vestibule is a lavatory. The living room with beautiful staircase, fireplace and triple window at the rear can be furnished very attractively. The sun parlor is a very cheerful room with windows on three sides. The dining room, cosy dining alcove and kitchen complete the first floor plan. On the second floor are three bed rooms, plenty of closet space and bath. It is 40′ x 24′ which does not include the grade cellar entrance addition projecting at the rear. This home located on a lot that will allow proper landscape planting will create a great deal of admiration.



· · FIRST · FLOOR · ·



· · SECOND · FLOOR · ·

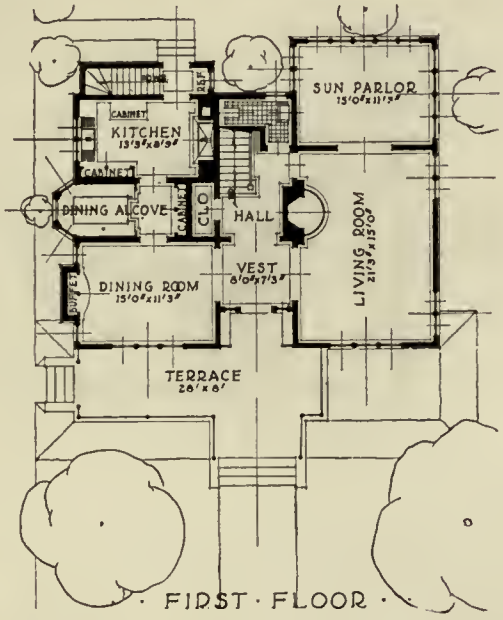


The Elwood

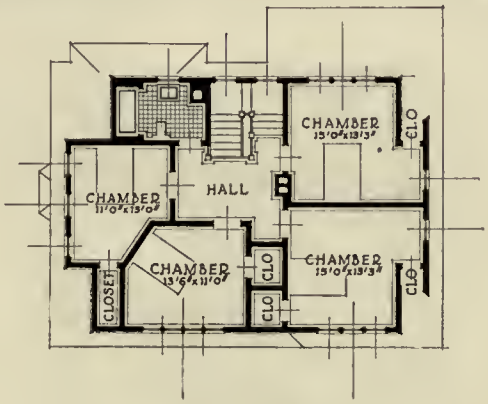
THE unusual and picturesque are charmingly combined in this home to give it distinction and personality. The treatment given the roof construction offers a possibility to add color that will be a pleasing contrast to white cement stucco walls. This design is 40′ wide by 34′ deep, and requires a lot with 60′ frontage or more.

A practical floor plan is illustrated offering to the home builder the utmost in convenience and comfort. The living-room and sun parlor connected with French doors give the appearance of one large room. The space under the main stairs is used for a lavatory. Dining-room with recess for buffet—dining alcove with china cabinet and well planned kitchen complete the first floor.

The hall at the top of the open stairs leads to four good chambers with closets and a large bath. The height of the ceiling on the first floor is 9′ and second floor 8′.



· · FIRST · FLOOR · ·



· · SECOND · FLOOR · ·

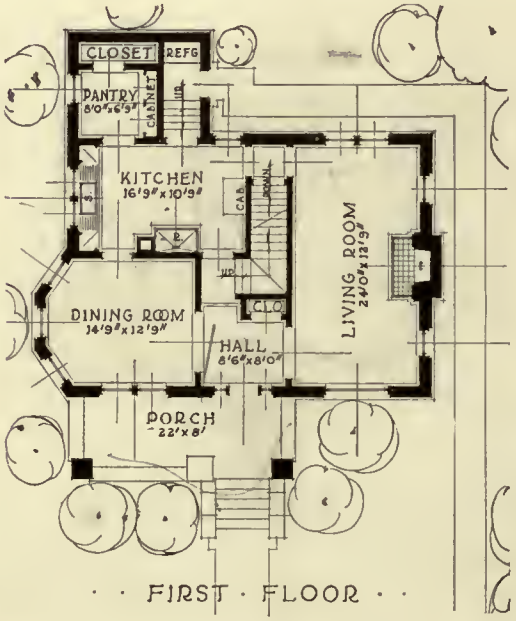


The Mayfield

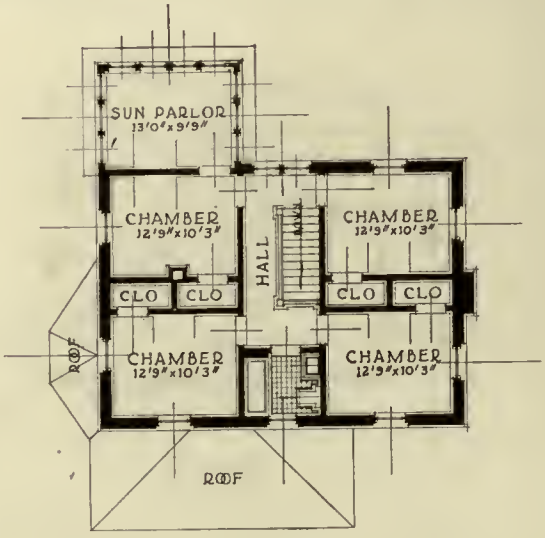
An excellent home of face brick, suggesting strength and warmth as well as "hominess." The wide porch, heavy eave construction and dormer are in perfect harmony with its substantial lines. The design shows a dignified handling of that type of home that will wear well and always receive pleasing comment.

The floor plan is all that can be desired of a livable home. The attractive entrance opens into a good size hall from which all the rooms on the first floor may be reached. The cellar stairs is placed under the main stairs and the rear entrance is at the grade line with a platform sufficiently large for refrigerator. The pantry and storage closet add considerable to the efficiency of the kitchen.

Four bed-rooms with connecting closets, sun-parlor or sleeping-porch and large bath are arranged on the second floor of this complete plan. Size 36′ by 26′.



· · FIRST · FLOOR · ·



· · SECOND · FLOOR · ·

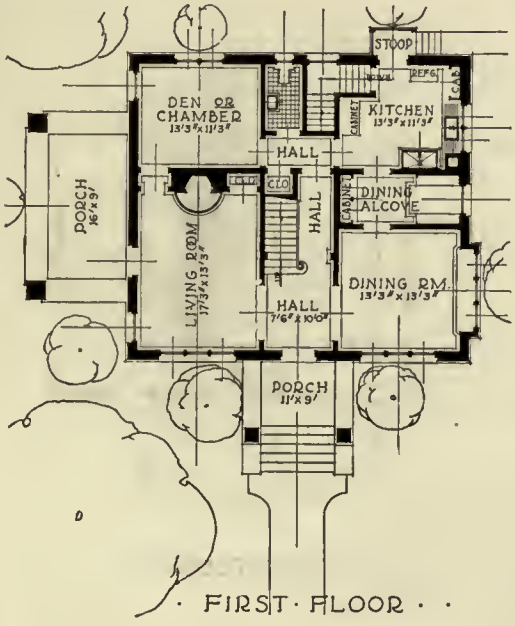


The Astor

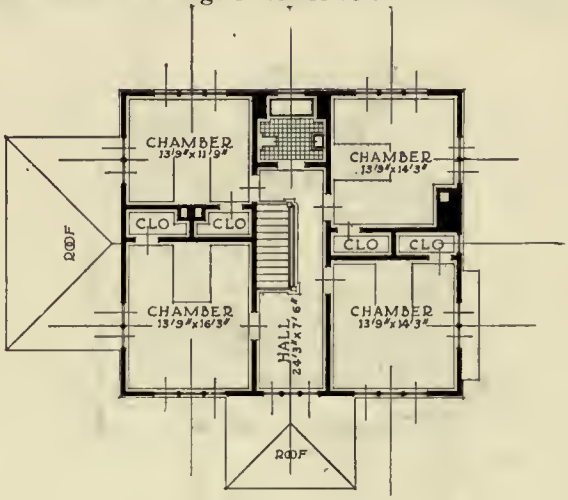
The home illustrated above expresses strength and in addition has individuality and charm. The combination wall covering of brick and stucco has been handled in a way which brings out their artistic possibilities when used together.

The front entrance has been given the necessary protection by the use of a hip roof porch. A study of the first floor plan reveals an ideal arrangement. A small hall at the rear forms a passage to the kitchen, den and living-room from the main hall, and the space underneath the stairs is utilized for a coat closet. All the features which make a kitchen practical have been conveniently arranged in this room.

The second floor plan contains four large bedrooms with closets and a good sized bath, all connecting with the main hall. This house is 43′ wide and 33′ deep with a 16′ by 9′ side porch and requires a lot with a frontage of 65′ or 75′.



· · FIRST · FLOOR · ·



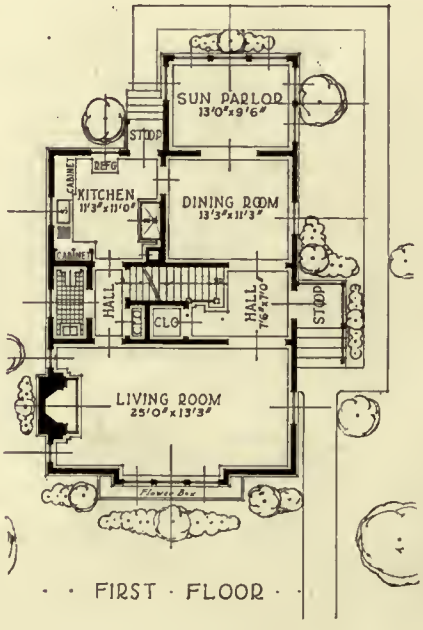
· · SECOND · FLOOR · ·



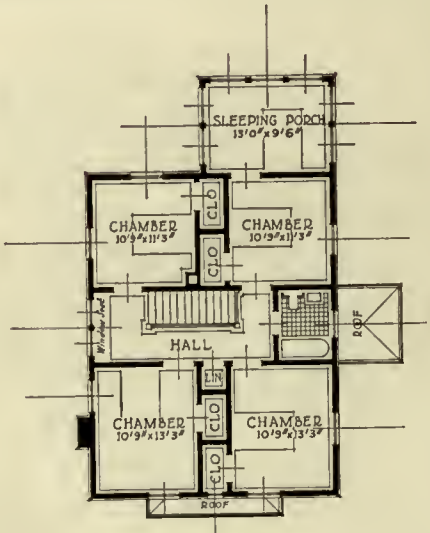
The Ogden

THIS is an interesting design which is well suited to a narrow lot. It is 26′ wide and 34′ deep, with a 14 by 10′ addition which adds a sun-parlor and sleeping-porch. A good suggestion for the exterior color scheme is to paint the wide colonial siding white or ivory, and the windows and shutters moss green.

Maximum convenience is found in the arrangement of rooms. The entrance, which is well sheltered, is into a hall containing an attractive open stairway and clothes closet. French doors have been used in the openings between the living-room, dining-room and sun-parlor. Entrance to the cellar stairs, storage closet and lavatory is gained through the passage from living-room to kitchen. The second floor contains four bed-rooms, sleeping-porch and a good sized bath. A window seat with hinged top and a linen closet are found in the upstairs hall.



· · FIRST · FLOOR · ·



· · SECOND · FLOOR · ·

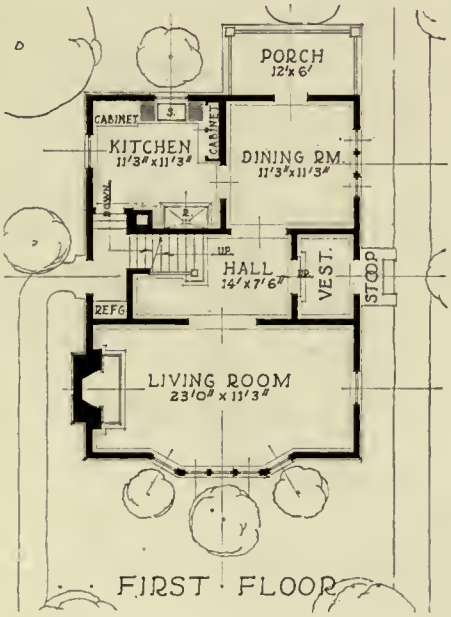


The Elmira

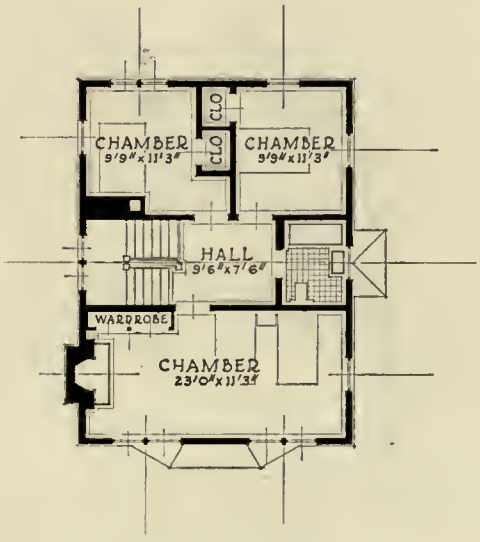
An extremely popular type of two story hip roof Colonial design. Its size makes it practical for a narrow lot and at the same time it will give a good appearance if placed with the entrance to the front instead of the side. From the hooded entrance the front door opens into a vestibule and from there to a central hall containing well designed Colonial stairs leading to the second floor.

On one side of the hall is the living room with attractive bay window and fireplace. The dining room and kitchen are located on the other side. The porch, with entrance from the dining room, has the privacy necessary for outside dining. The space under the main stairs is used for grade cellar entrance and refrigerator platform.

The second floor plan contains three bed rooms, and bath which open off a central hall. Each bedroom has a good size closet. This home is 24′ wide and 32′ deep.



FIRST · FLOOR



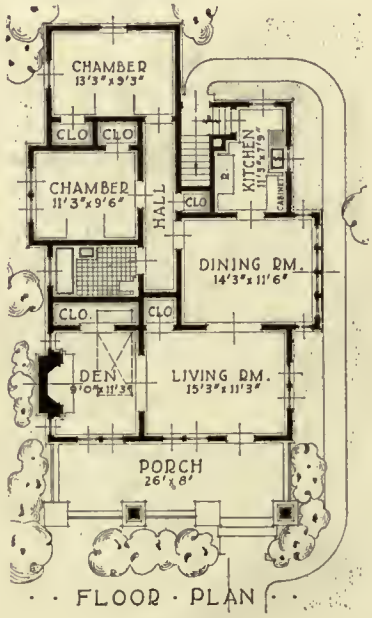
· · SECOND · FLOOR · ·



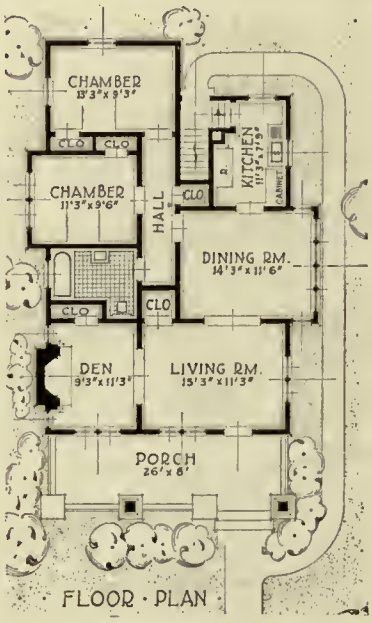
The Riverside

A BEAUTIFUL home nestling close to the ground and radiating the true bungalow spirit in its architecture. Low pitched roof with projecting gables, shingled side walls, brackets and wide eaves reflect the coziness and comfort within. This plan is 26′ wide and 42′ deep, not including the 3′ bay projection at the side.

A choice of two floor plans is shown. Plan A is arranged with a Murphy Door Bed installed in the closet off of the den so that this room may be converted into a bed-room, adding three bed-room efficiency at a small additional cost. The two floor plans are practically identical with this exception. The openings between living-room, dining-room and den are planned for French doors. The bay-window projection with attractive window arrangement in the dining-room makes this room very pleasant. The balance of the plan is devoted to kitchen, two bed-rooms, large bath and closets.



PLAN A

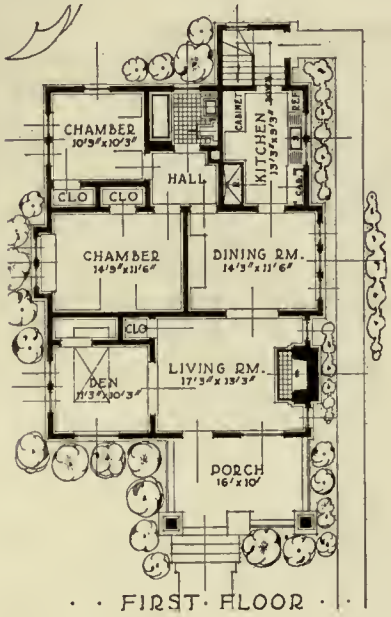




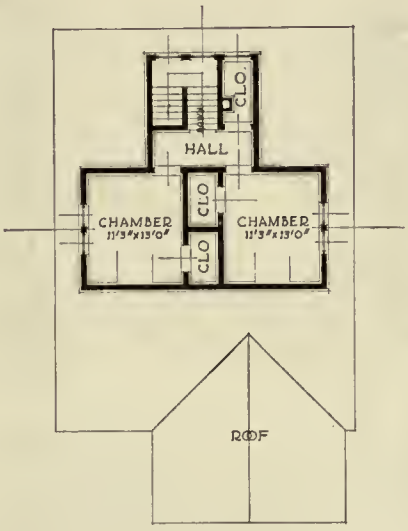
The Creston

In this charming bungalow both the beautiful and practical are discerned in its attractive lines. Its broad roof lines broken somewhat by the porch gable, are in good proportion.

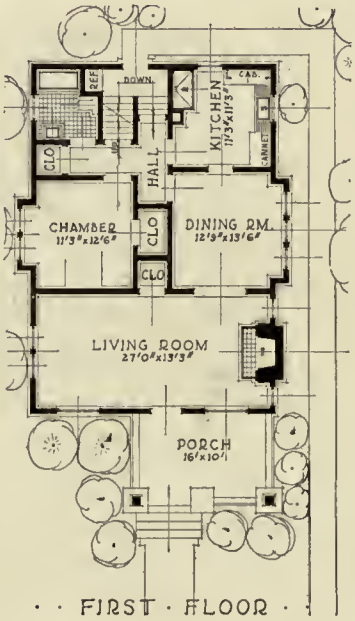
In designing this home we have illustrated a very practical one-story design and by adding a small dormer to allow for stairs it is possible to have a story and a half plan. Size 28′ x 40′. The one-story plan has a nice living-room and den across the front, two bed-rooms and bath off the hall, dining-room and kitchen with grade cellar entrance. By the installation of a Murphy Door Bed in the closet off the den, this room can be used as a third bed-room. In the story and one-half plan, a large living-room occupies the entire front of the house, with one downstairs bed-room, bath, dining-room and kitchen on the first floor. The stairs to the two bed-rooms on the second floor lead up from the hall at the rear.



· · FIRST · FLOOR · ·



· · SECOND · FLOOR · ·



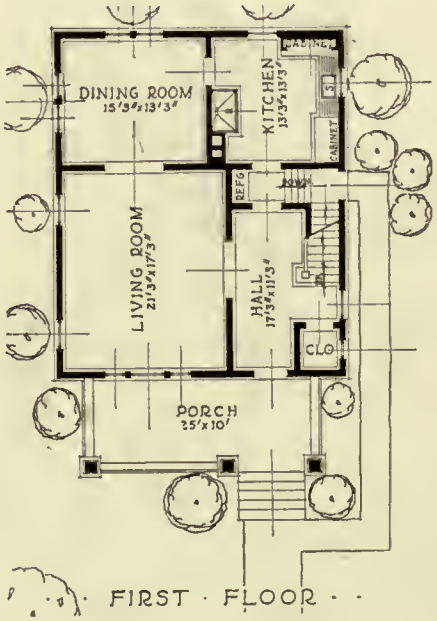
· · FIRST · FLOOR · ·



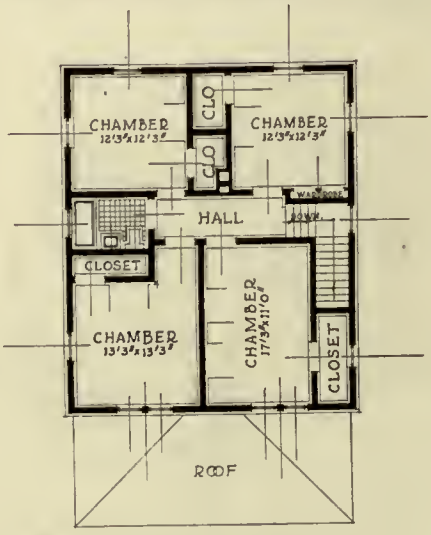
The Westbrook

A SUBSTANTIAL home whose exterior and interior are equally attractive. A pleasant contrast is made by the use of wood shingles for the upper side walls and siding for first story. The large porch with hip roof supported by square columns is in harmony with the house proper.

The rooms are especially well arranged. The hall contains a cloak closet and opens into the living room with a pair of French doors which are also used in the opening between the living room and dining room. Convenience is added to the first floor of this plan by a passageway underneath the main stairs which leads from the kitchen to the main hall. This space is also large enough for refrigerator storage and leads to the grade and cellar entrance underneath the main stairs. On the second floor are four large bed rooms with roomy closets and bath. This home is 30′ wide and 36′ deep.



· · FIRST · FLOOR · ·



· · SECOND · FLOOR · ·

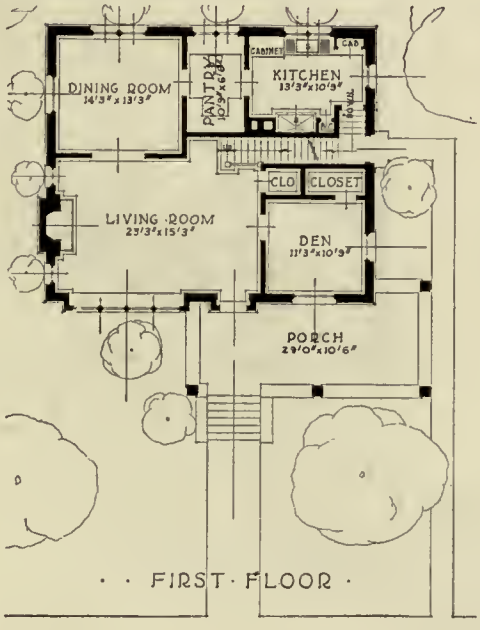


The Manchester

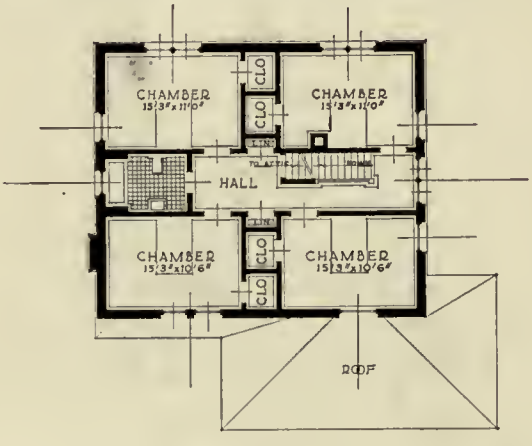
An attractive and substantial face brick home with a comfortable front porch. The scrolled brackets, wide eave projection and dormer are arranged with very good taste. One can easily imagine the comfort of a home like this. The plan is cleverly arranged and complete. The living-room, with semi-open stairway and brick fireplace, will charm the visitor and delight the owner.

Dining-room, kitchen, pantry and den complete the first floor plan. With very little additional expense a Murphy Door Bed could be placed in the closet off the den, making it possible to convert this into a downstairs sleeping room in a few minutes.

The second floor contains four bed-rooms with closets, bath and two linen closets off the hall. All bed-rooms, with the exception of one, are exposed on two sides, thereby securing excellent cross ventilation. This plan is 36′ wide and 31′ deep.



· · FIRST · FLOOR ·



· · SECOND · FLOOR · ·

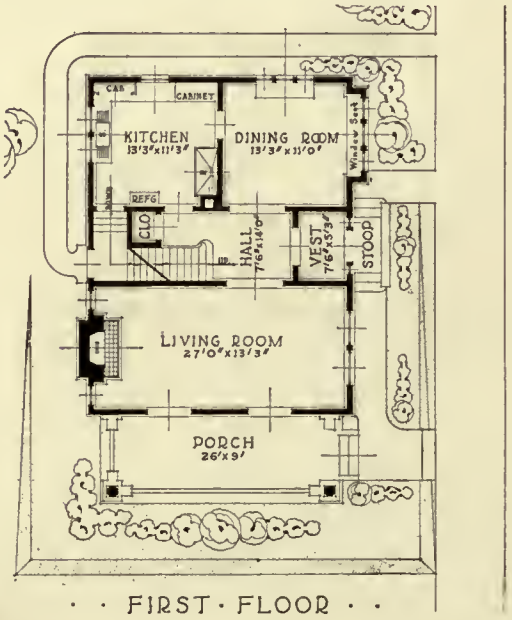


The Charleston

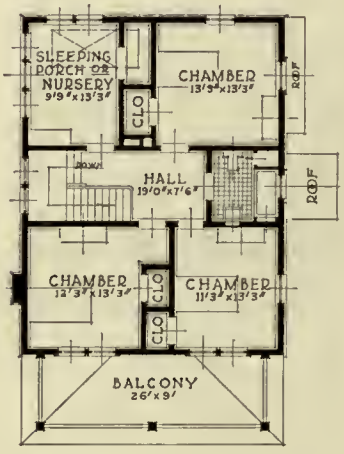
STRENGTH and beauty are represented in this home with exterior walls finished in white Portland cement stucco. The attractive hooded entrance and large porch with a balcony at the side contribute to its artistic appearance.

The central hall containing a Colonial stairway separates the living-room on one side of the plan from the dining-room and kitchen on the other. French doors are used in the openings between the living-room, hall and dining-room; also from the living-room to the porch. The built-in window seat in the dining-room is a notable feature. The kitchen contains all the conveniences of a home.

On the second floor are three large chambers with closets and bath. The fourth room is equipped with a Murphy Door Bed, permitting it to be used as a sewing-room or nursery during the day and a sleeping room at night. This plan is 28′ wide and 36′ deep.



· · FIRST · FLOOR · ·



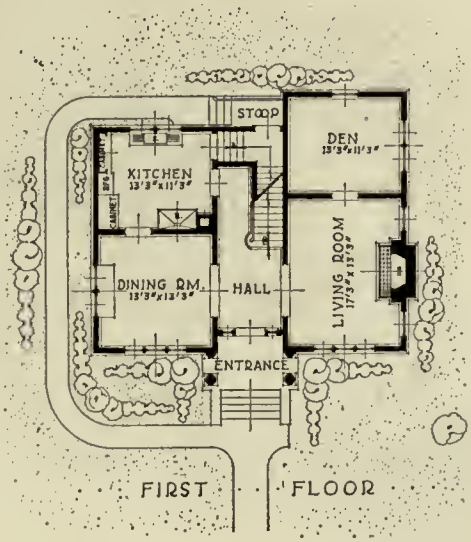
· · SECOND · FLOOR · ·

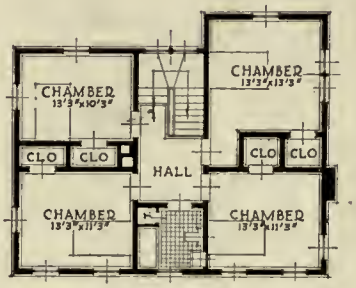


The Madison

THIS home will gladden the hearts of many builders because of its spacious, comfortable, conveniently arranged plan. Its rectangular shape results in every square foot of space being utilized to advantage. The size of this house is 36′ wide and 30′ deep, which includes the 4′ extension of the den and upstairs bed-room.

The entrance is into a deep hall with a beautiful Colonial staircase. The attractive front door with side-lights gives the desired impression to that part of the home which is seen first and last. On the right side of the first floor plan French doors open into a spacious, well lighted living-room with a cosy den at the rear. The fireplace forms one of the chief centers of interest in the living-room. On the opposite side of the hall are located the dining-room, kitchen and grade cellar entrance. Note that there is a passage from the kitchen into the main hall which saves many steps in a day's housework. The second floor plan contains four large bed-rooms and bath opening off the central hall, each bed-room being designed with good closet space. The bath is sufficiently large so that a linen closet and medicine chest can be incorporated without overcrowding.





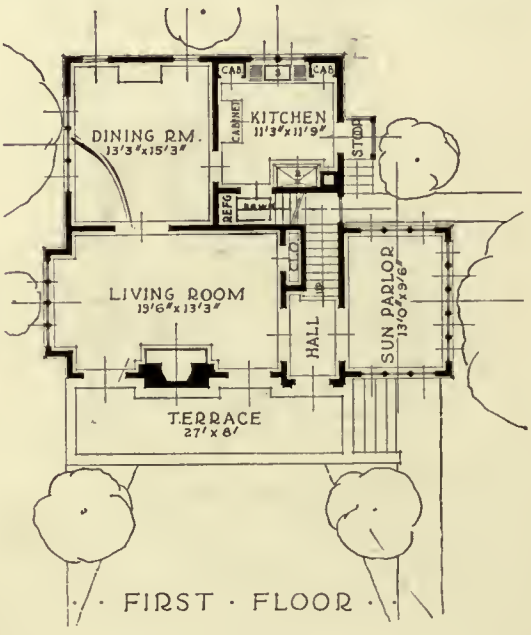
SECOND FLOOR



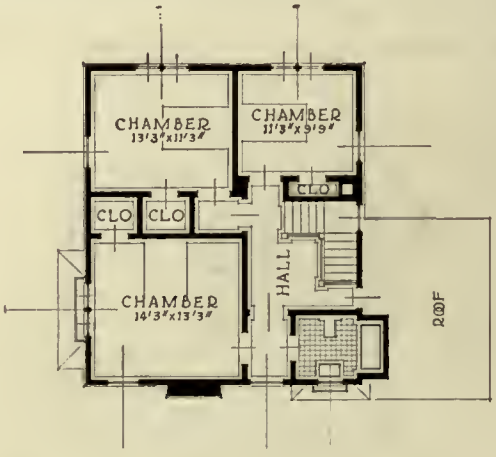
The Pines

THIS home is of unusual architecture and results in a distinctive charming type. The large fireplace chimney, shingled side walls and broken roof lines are attractive features of the exterior. This design would also look very good with an exterior wall covering of wide Colonial siding or white Portland cement stucco.

The main hall which contains the stairway to the second floor separates the sun parlor and living room on the front of this plan. These openings are equipped with French doors. The living room contains an attractive bay window and cheerful fireplace with a pair of doors on each side opening onto the front terrace. A good sized dining room connecting with the complete kitchen balances the first floor of this home. From the upstairs hall, you will find a convenient arrangement of three bed rooms and bath, each bed room having a good sized closet. The size of this design is 26′ wide x 30′ deep.



· · FIRST · FLOOR · ·



· · SECOND · FLOOR · ·

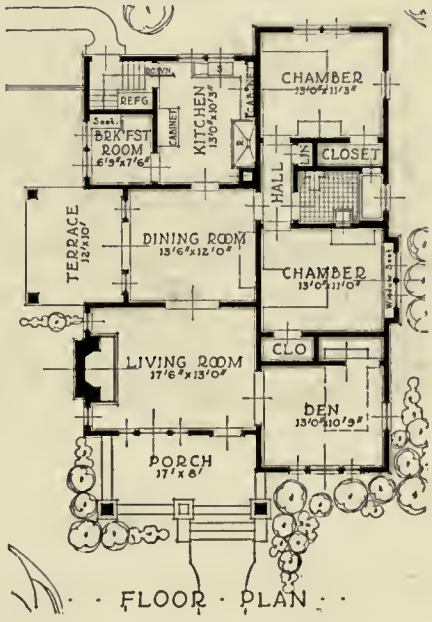


The Sprucewood

NESTLING close to the ground, this typical bungalow, with its shingled walls stained brown and trimmed in white, has a charm and appeal not to be ignored. As illustrated, it has been erected on a corner lot, but will give a very satisfactory appearance on an inside lot of medium width. This plan is 32′ wide and 47′ deep.

On entering this home you are immediately pleased with the appearance of the large living-room, dining-room and den, which are connected by the use of French doors. The closet off the den has been equipped with a Murphy Door Bed which converts it into a third bed-room, giving three bed-room efficiency whenever desired and will be appreciated by every small home owner. The other two bed-rooms are of good size and are connected with a small hall which also enters into a well planned bath. Kitchen, breakfast-room, and grade cellar entrance with platform for refrigerator, complete this attractive design.





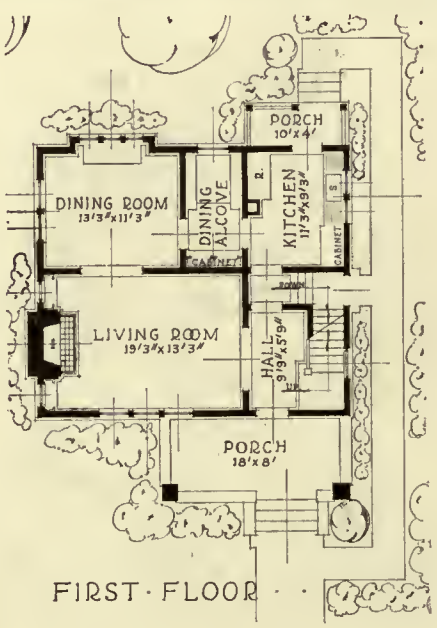
FLOOR PLAN



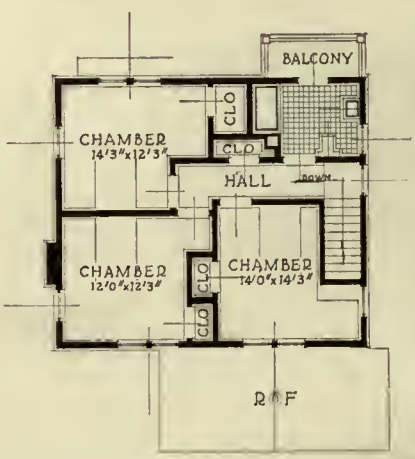
The Brookfield

THIS home, with shingled side walls and strong lines broken only by the gabled porch roof, is a true American type. The attractive dormer eliminates any suggestion of plainness. Due to a carefully studied room arrangement every square inch of floor space is used to the best advantage. From the porch one enters the hall which contains a passage to the kitchen underneath the main stairs. This space is also used for a grade entrance and cellar stairs.

As you pass from the hall into the living-room you are impressed by the attractive fireplace which is designed so that bookcases may be built on both sides. Between the kitchen and dining-room is a dining-alcove with a built-in cabinet for china. The second floor is devoted to three large bed-rooms, closets, and the well planned bath which has a door opening onto a balcony, which forms the roof of the back porch. This house is 30′ wide and 26′ deep.



FIRST · FLOOR



· · SECOND · FLOOR · ·

AFTERWORD

THE National Homebuilder's Society, in this volume, makes its initial bow to thousands of American prospective homebuilders. As we bow ourselves off the stage in this concluding page we promise many returns.

Our ambitions will have been attained and our purpose accomplished if our acquaintance will result in giving to many communities in which we have clientele homes of character, not houses whose chief distinction is inconvenience. We have so often repeated and wish here to say again that as a rule it costs less both in initial construction and in upkeep to build right than wrong.

Whatever the field of operation expert advice makes for efficiency and economy. Homebuilding is not the exception that proves the rule. Here expert advice, expert workmanship and quality in materials means efficiency, economy, convenience and satisfaction. It means reasonable first cost and reasonable upkeep. It means the most possible convenience for the dollars you have to invest. It means appropriate setting and design. In a word, it means a *home* not a *house*. No man takes upon himself a greater responsibility than that of advising the American homebuilder for the home is the nucleus of our American nation. Someone has said, "As the home is, so our country." Substantial, beautiful, well designed homes make for substantial, beautiful, well purposed character and we offer no apology for this attempt to contribute our little share to an end of so commendable a nature.

All the designs illustrated on the preceding pages are actual photographs of houses which have been constructed under various conditions in all parts of the country. We have made a special effort to show as far as possible all the popular ideas used in connection with the moderate priced home, but owing to the fact that the floor plans are reduced to such a small scale it would be confusing to try to incorporate the details that our finished drawings contain. We are also limited as to space to describe the features of each design. Therefore, if you are not absolutely sure that the plan you have selected will meet with your requirements we invite correspondence in order that you will become thoroughly familiar with it before starting the erection.

The floor plans we have illustrated have proven satisfactory and practical but owing to certain conditions you might find it necessary to make some minor changes in order to have them comply with your requirements. These changes will be made at a small additional cost and upon request we will gladly furnish you with a profile in blank which you can use to sketch the changes you desire.

The small fee which has been charged for membership in the National Homebuilder's Society entitles the members to considerable more than our publication, "The Homebuilder." You are privileged to use this certificate and membership to consult our different departments which are conducted by experts regarding interior decorating, landscape gardening and, in fact, any problem that you have in connection with your building project. We invite correspondence and trust that we will have the pleasure of assisting you with all the details in order that you will become a happy, satisfied homebuilder.

NATIONAL HOMEBUILDER'S SOCIETY

INDEX

	PAGE
Abbott	140
Aberdeen	150
Allenton	39
Andover	117
Arlington	115
Armston	121
Ashley	139
Astor	177
Athens	135
Auburn	101
Baldwin	100
Barrington	13
Berwyn	144
Bills of Material	17
Brewster	19
Bristol	65
Brockton	34-35
Brookfield	188
Bulbs	166
Carlisle	172
Castleford	112
Cedars	86
Charleston	184
Chelsea	69
Chester	72
Cleveland	55
Clinton	173
Cranston	159
Creston	181
Comparative Cost of Renting and Owning Your Home	7
Construction, A Guide to Good	20
Contracts	20
Cortland	109
Durant	168
Elmira	179
Elwood	175
Excavating	21
Face Brick	28
Fayette	97
Fertilizer	156
Financing	8
Flooring, Maple, Beech and Birch	118
Oak	66
Flowers	165
Footings	21
Foundations	21
Framing	22
Franklin	32
Gilberton	45
Glen Falls	33
Grass Seed	154
Greensboro	73
Grossmere	99
Hancock	113
Hartford	76
Heat Regulation	58
Hillsboro	57
Hillsdale	146
Homestead	151
Hot Water Heat	102
Hot Water in the Home	110
Howard	87
Hudson	163
Huron	108
Ideal Arcola	104
Interior Decorating	132-3-4-6-8
Jackson	155
Jeanette	68
Joists	24
Lancaster	145
Landscape Gardening	152
Lath, Metal	51
Wood	51
La Salle	174
Lawns	152
Lawton	84
Lexington	26-27
Lighting	124
Lincoln	77
Litchfield	23
Loam	156
Loraine	85
Lourim	38
Lumber	22
Madison	185
Manchester	183
Manor	128
Marysville	149
Mayfield	176
Maywood	96
McKinley	63
Metal Weather Strips	74
Michigan	114
Mt. Pleasant	130
Murphy Beds	88
National Homebuilder's Society, Purpose of	5
Oakland	14-15
Ogden	178
Olympia	78
Ossining	60
Palmer	56
Pasadena	70
Pendleton	122
Pines	186
Plans	17
Plaster	40
Plumbing	80
Prescott	12
Quantity Surveys	17
Racine	62
Rafters	24
Redford	93
Redlands	47
Refrigeration	129
Rembrandt	71
Riverside	180
Rochelle	79
Rockford	46
Roofing	24
Rose Gardens	162
Saginaw	54
Sanitary Elimination of Household Waste	36
Santa Rosa	148
Selecting the Location	10
Selecting Your Home	16
Sheetrock	43
Sherwood	64
Shingles	24
Shrubbery	157
Slate	25
Somerset	98
Specifications	17
Sprucewood	187
Stanton	137
St. Claire	44
Steam Heat	102
Stucco	50
Superior	167
Syracuse	49
Tarrytown	158
Tiffin	92
Vernon	116
Vines	157
Warm Air Heating	94
Washington	48
Waterford	131
Weeds and Worms	157
Westbrook	182
Westfield	61
Wetherby	120
Wexford	123
Winchester	170
Windemere	169
Winona	171
Wooster	147
Worcester	90
York	91

